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Original Articles.

THE GYROMELE IN THE DIAGNOSIS OF STOMACH AND INTESTINAL DISEASES.*

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CHICAGO.

The gyromele (revolving sound) is a flexible steel cable, terminating in a more flexible steel spiral end. This spiral end is provided with a metallic pellet, and covered by a sponge, lamb's wool or cotton. The sound is fastened in a revolving apparatus—not unlike a surgeon's drill. After introduction into an accessible cavity of the body, if the revolving apparatus is put in motion, the rotations of the cable cause vibrations of varying degree which, being transmitted through the tissues, are perceived externally by means of auscultation and palpation.[1]

Cables of different caliber and length have been devised in order to obtain cables of different degrees of flexibility and elasticity, which considerably broadens the scope of usefulness of the gyromele, especially for diagnostic purposes.[4] But it is not only the extraordinary adaptability, flexibility and elasticity which enable the instrument to enter cavities hitherto inaccessible, but the rotary motion adds greatly to the safety and facility of the use of the gyromele sound.

Since the delicate rotations gently wend their way through any possible narrowing, and these rotations can be followed externally by the auscultating ear or the palpating finger, we are enabled to gain valuable information of cavities which were formerly inaccessible. This information is limited not alone to anatomical data, as situation, extension, capacity, etc., of the sounded cavities, but by means of specially constructed gyromele sounds we may obtain valuable data as to the contents of these cavities, adherent masses of mucus, bacteria, etc. Thus, I have been able to remove, by these means, bacteria from different regions of the stomach, and make extensive studies of the normal and pathologic flora of this organ.[3 4 5 6 11 14 18] The following cavities have been explored successfully with the gyromele: Nose and throat; esophagus; stomach; pylorus and small intestine; colon; bladder; uterus; thoracic cavity; false cavities of various character.

Various attempts had been made before the year 1894 to sound the stomach. Exploration with the stomach-tube for sounding the stomach was not successful, as no means of locating the tube within the stomach, such as by palpation, were presented, and, therefore, Leube attempted to locate the great curvature of the stomach by pushing in a stiff sound. Ewald ("Diseases of the Stomach," Am. Trans., 1892) shows the impossibility of locating the curvature of the stomach by using the stiff sound, in the following language: "A stiff sound is introduced into the stomach until it meets with resistance, as far as is feasible, without the employment of undue force. If, now, the sound can be palpated below the level of the umbilicus, dilatation of the stomach is proved to exist. This method has been objected to on the ground that it is dangerous, and that it is frequently impossible to feel the tip of the sound. Leube has rejected both objections, and, so far as the former (danger) is concerned, I fully agree with him. Feeling the point of the sound through the abdominal wall is an entirely different matter. It is most frequently utterly impossible to feel the sound distinctly, even if we go over the whole abdomen as carefully as we can, palpating one square inch after another. Further, we must remember that the stomach is not infrequently in a vertical position, etc. For all these reasons, palpation with the sound will only give uncertain results."

As sounding the stomach with a stiff sound was proved to be both impossible and impractical for diagnostic purposes, the method was abandoned. No other attempts appear in literature of the use of the gastric sound for diagnostic purposes, until the publication of my method (1894) of using a revolving flexible sound, which is not only an advance of all other methods, but is based upon a different principle.[1]

1. The flexibility of the sound is of such a degree as to adapt itself accurately to the situs, shape and size of the organ.

2. By means of the revolving apparatus (drill) to which the sound is attached, vibrations are produced which can be palpated and auscultated externally, thus giving us exact information of the presence and locations of the revolving cable.

3. The situation of the metal sound can also be verified *intra vitam* by means of the *x*-rays. The fluoroscope and the skiagraph give excellent results.

4. Percussion of the inflated stomach is rendered more facile and exact when the border-line of the stomach has been established beyond doubt, by means of the introduced cable. Only then are we enabled to distinguish the finer differences of sound between the stomach and the intestine.

ESOPHAGUS.

The difficulty and impossibility of ascertaining the exact position of the cardia, *intra vitam*, has led to methods of determining the length of the esophagus in the living, by means of external, anatomical landmarks. The usual method is to measure from the line of the incisors externally to the xyphoid appendix of the sternum, giving the sound a corresponding curve. Others measure from the incisors along the lobe of the ear to the tenth dorsal vertebra. The following is

* Presented by invitation at the Exposition of Diagnostic Instruments, in connection with the Congress of Internal Medicine, Berlin, April, 1901.

Rosenheim's method: From the second spinal process along the median line, to the costal articulation of the twelfth thoracic vertebra on the left side. This represents the length of the gullet from the uvula to the cardia; the distance between the uvula and the incisors must be added to the obtained figure (7 cm.).

It seems unnecessary to call special attention to the inaccuracy of these methods. The gyromele is the only instrument which, by the above-mentioned vibrations, makes its presence manifest as soon as it enters the stomach. If the presence of the end of the rotating sound—which is provided with a conical tampon of cotton or sponge—is once ascertained, it is then easy to exactly localize the cardia by gently withdrawing the sound until it meets with slight resistance—the narrowing of the cardiac portion of the esophagus.

The accidents reported in connection with sounding of the esophagus are appalling. These mishaps will

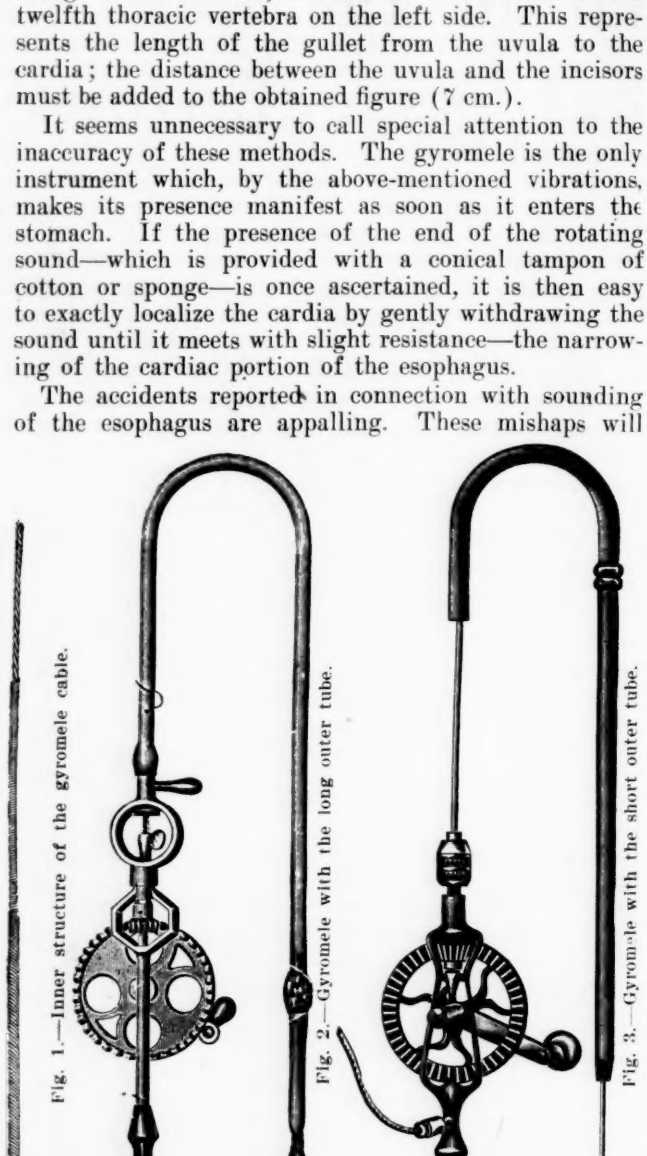

Fig. 1.—Inner structure of the gyromele cable.

Fig. 2.—Gyromele with the long outer tube.

Fig. 3.—Gyromele with the short outer tube.

be reduced to a minimal number if an instrument is used which combines elasticity, flexibility, with a cushioned extremity, and, when introduced, does not depend on the pushing force, but rather upon the gentle rotary motions, thus wending its way by any partial obstruction which it may encounter, without danger of injury.[1 3 4 7 9]

The gyromele is introduced like the ordinary stomach-tube. The vibrations of the rotating end are palpated as soon as this emerges from behind the ensiform appendix of the sternum; then, as has been described, the sound is withdrawn until the cone-shaped cotton tampon or sponge attached to its end is marked at the point of the incisors by means of a tightly-fitting, movable, rubber ring. The gyromele sound is then completely withdrawn and the distance measured from the rubber ring to the base of the cone-shaped cotton tampon, this being the distance from the incisors to the cardiac end of the esophagus.

The cable I have used for special esophageal diagnosis is of medium flexibility (No. 2, about 60 cm. in length). The cable terminates with a more flexible spiral end, which is provided with a metallic pellet, thus affording a means for the attachment of a cone-shaped cotton pledget or sponge. (Fig. 5.) When it is desirable and of advantage, the cushion of cotton or sponge is covered with a thin rubber finger-cot, tied and secured with a fine silk thread. This greatly facilitates the introduction of the cable and renders the same less dangerous than the use of any of the described instruments.

Where greater accuracy is desired, the location of the narrowing at the cricoid cartilage can be ascertained in the same manner with the additional assistance of rotary vibration, which can be easily felt at this point externally.

Where there is a patulous condition of the cardiac orifice, this orifice may not offer sufficient resistance, so the cotton pledget attached to the end of the cable is increased in thickness and the procedure repeated. The attachment of the cotton or wool pledget is an easy procedure: While the cable is being rotated, a small layer of cotton is allowed to wind itself firmly around the pellet of the spiral end of the cable. This forms the apex of the cone. A second larger layer is then placed a little above and overlapping the first layer, forming the base of the cone. More and larger layers of cotton can be added, according to the size of the pledget required.

Attachable cone-shaped sponges may be used instead of cotton pledgets. By covering the cable with a tightly-fitting rubber tube, as described,[16] which is graduated in centimeter scale, the measurements from cardia to incisors can be readily read from the cable.

Intragastric Bag, (JOURNAL A. M. A., June 11, 1896).—I have also used rubber bags attached to a double tube, through one of which the gyromele cable is introduced; the other serves for the introduction of air for inflation of the rubber bag. To prevent escape of air through the first or cable tube, the opening of this tube is occluded by a rubber stopper through which the cable passes. The passage of the bag through the cardiac opening into the stomach is detected in the usual manner by external palpation of the rotating end of the sound. After inflation and partial withdrawal of the bag, it meets with the cardiac resistance. (Fig. 6.) This, however, is not as reliable as my other methods, for the reason that the inflated bag occupies the gastric funnel-shaped portion of the cardia, thus meeting the resistance of the gastric walls,[15] and not of the cardiac orifice proper; this results in false measurements of the length of the esophagus and false location of the cardia. This is the reason why McCaskey in measuring the esophagus by means of this method obtained greater figures of the length of the esophagus than did other observers (Proc. of the Am. Gastroenterological Society, 1900).

I have frequently, in the past, called attention to the fact that by this method of using the gyromele strictures could be located in the esophagus, not only by measurement of the distance from the point of obstruction to the incisors, but by palpating and auscultating the vibrations of the gyromele at the seat of the obstruction.[4 7 9] Thus, Ferguson[31] was able to locate exactly an obstructing tumor opposite the bifurcation

of the trachea, before operation. He states: "Upon using Turck's gyromele, we could feel the rotation of the sponge, which was most marked opposite the bifurcation of the trachea." By the same means, diverticula of the esophagus may be explored, and, further, it may be ascertained whether the sound has entered a diverticulum or has passed into the stomach, which is determined by palpation and auscultation of the rotating sound.

STOMACH AND INTESTINES.

For the past eight years I have made extensive use of the gyromele in the exploration of the stomach and intestines, for various diagnostic purposes. In 1893 I first examined and treated a series of interesting cases, proving the accuracy of my methods when combined with the extant methods.[4]

CASE 1.—Dec. 5, 1893, J. J., aged 44. Not alone were we enabled to localize the greater curvature 5 cm. below the umbilicus, but it was also possible, by the aid of the gyromele, to diagnose a thickening of the pylorus with absolute certainty.

CASE 2.—Nov. 3, 1893, Mrs. J. L., aged 51. Localization of the greater curvature below the umbilicus, discovery of a tumor in the anterior wall of the stomach, and bacteriologic examination was made.

CASE 3.—A. M. C. Greater curvature below the line of umbilicus and also tumor-like thickening of the anterior

Fig. 4.—Rubber coated metal cable with metal pellet end.

gastric wall. Report of necropsy (published) confirmed the diagnosis, and proved that with the aid of the gyromele it is not only possible to exactly determine the dimensions of the stomach, but also to diagnose, *intra vitam*, thickenings and tumors of its walls.

CASE 4.—Nov. 4, 1894, L. S. By means of the gyromele, the greater curvature was found 4 cm. *above* the umbilicus-line. An explorative laparotomy confirmed this, and revealed a scirrhus along the lesser curvature.

I have had numerous occasions in the past eight years to make the diagnosis by the aid of the gyromele and see it confirmed by laparotomies and necropsies.[4] I have also reported that during abdominal operations performed by Murphy, Newman, Ferguson, Beck, myself and others, I could determine with exactness the vibrations of the revolving sound.[30]

Dr. Borland and myself have reported on a series of experiments with the gyromele on the cadaver. It must be admitted that the phenomena due to the gyromele are more positively manifest in the living.[30]

During transillumination of the patient with the *x*-rays, a procedure which I have used since 1896, it could be clearly observed how the sound made its way through the stomach and pylorus into the small intestine.[30]

CASE 5, which I demonstrated in London, in 1898, (Demonstrations and Lectures at St. George's Hospital, August 8, 9 and 10) was that of a woman 50 years of age, who had shown stomach symptoms for over a year. The vibrations of the gyromele could be felt through a paper placed upon the abdomen of the patient, and thus an exact drawing of the contour of her stomach could be made. An accurate description of this case is to illustrate the technique of gastric diagnosis by means of the gyromele. The patient manifested all the symptoms of retention of food—frequent vomiting, emaciation, etc.[41]

Aug. 8, 1898, three hours after a test-meal, a very flexible gyromele sound was introduced, the patient

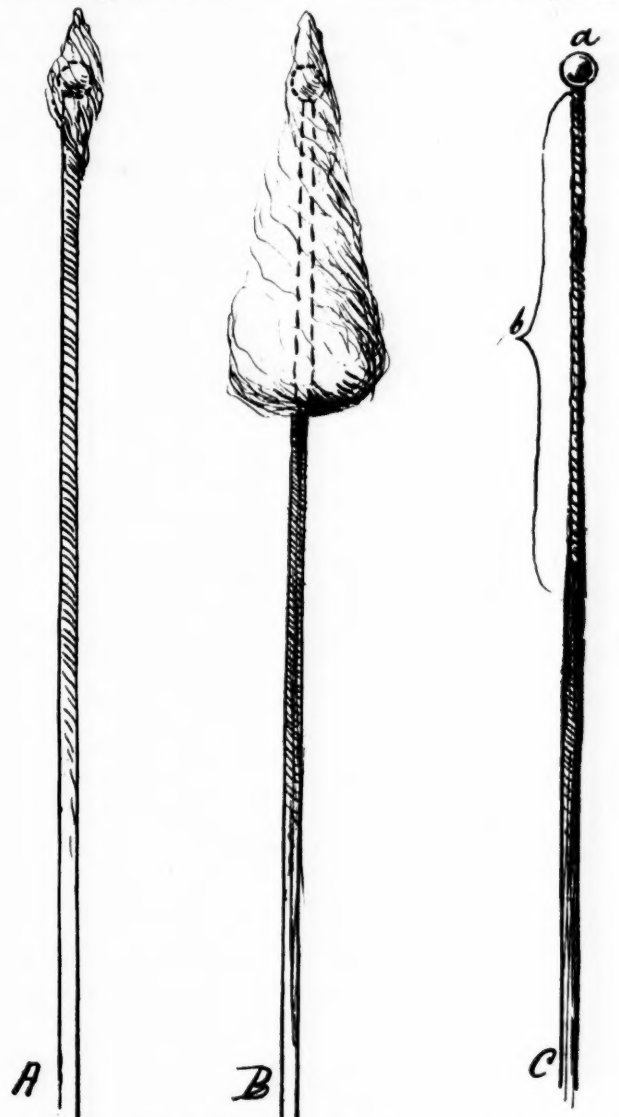

Fig. 5.—A, with first layer of cotton or wool; B, the finished conical cotton tampon (to be covered with rubber); C, the spiral end with metal pellet.

being recumbent. Location of the greater curvature was determined through the vibrations of the rotating gyromele, and found to be on the line of the umbilicus, "and by pushing the cable further into the stomach until the revolving sponge impinges against the lesser curvature, we find it located just below the border of the left lobe of the liver. On withdrawing the gyromele and testing the liquid which can be obtained by squeezing the sponge, we find that there is no HCl present in the stomach. The outline and position of the stomach, as thus determined, are shown by the diagram. (Fig. 7a.) . . . . In order to determine the degree of

distensibility of the stomach, we now pass in a gyromele having a somewhat *less flexible* cable than the one just used, and again determine the outline of the stomach by palpating the revolving and vibrating sound. This time, with the patient sitting upright, we find the greater curvature below the umbilical line and quite near the hypogastric line, while the lesser curvature can be distinctly outlined just above the epigastric line. As shown in the diagram (Fig. 7b), we find with this second cable that the stomach is only slightly dilated, but that it is a case of marked gastroptosis with very lax ligaments, the stomach being freely movable in its position. The long duodenal cable is next introduced for the purpose of sounding the pylorus. The sound is obstructed as it reaches the pylorus and further pushing only elicits signs of pain. The tip of the revolving sound can easily be recognized and the palpation indicates a hardened and thickened pylorus, but no tumor can be felt."

From the examinations thus made, we arrive at the following diagnosis:

1. Absence of free HCl after various test-meals, together with the failure of the gyromele to produce a

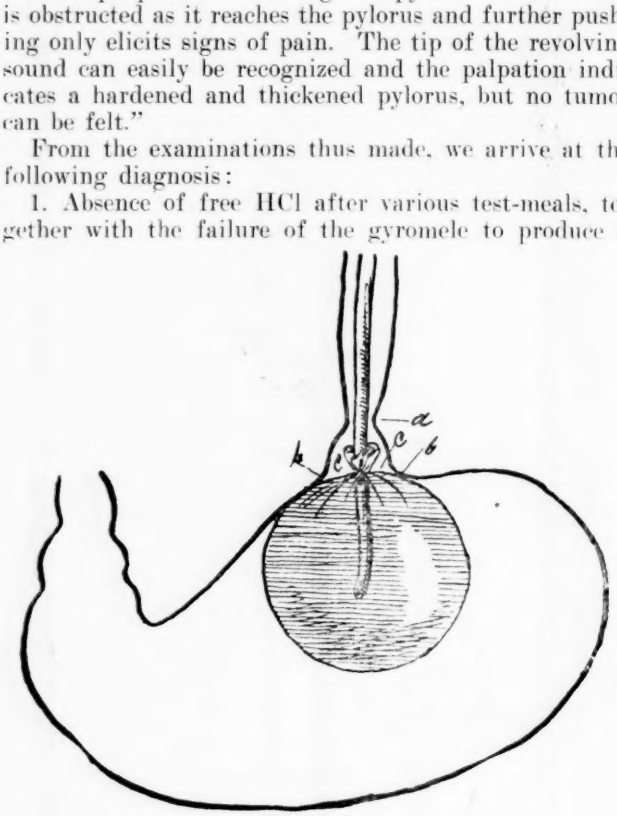

Figure 6.

secretion of the acid, would indicate atrophy of the glands.

2. The slight dilatation of the stomach, together with the ease with which the whole viscus can be pushed downward, as shown by the use of cables of different flexibility, indicates the presence of gastroptosis and the thickened walls show hypertrophy.

3. The long retention of food indicates either motor insufficiency due to myasthenia, or pyloric obstruction, and as the duodenal sound indicates a hardened and thickened pylorus, we conclude that this is a case of stenosis pylorica. In view of the fact that the pyloric obstruction, notwithstanding the marked atrophy, is almost complete, I recommend immediate operation.

"(Through the courtesy of Dr. Ewart, the attending physician in charge of the case, the following hospital report has been received:) Operation was performed by Mr. Jaffrey on August 17. No outlying mass of cancer or glands could be felt. The stomach was of *moderate size* with thick muscular walls and *did not reach below the umbilical level. Owing to its dropped state* it could be easily pulled through the incision as well as the pylorus. The pylorus and its vicinity were free from peritoneal adhesions or thickenings. There were a few superficial pyloric venules and minute whitish specks, but no important engorgement. The gall bladder was greatly distended with bile. *Marked thickenings could be felt* not only *at the pylorus,* but in one inch or two inches along the duodenum and two inches or three inches along the lesser curvature. This decided Mr. Jaffrey to prefer gastro-jejunostomy to pyloroplasty, and this was accordingly performed with satisfactory results, the patient doing well for two days. On the third day she began to vomit. Exhaustion set in on the fourth day, when she died. At the necropsy, no tympanites or peritonitis could be found. The external and the stomach wounds were sound. *The thickening* which had been felt, was found to be almost entirely muscular, traversed from within by a few fibers from a thin radiating deposit with white fibrous tissue in the submucous layer. In connection with this, the mucous membrane at the pylorus and for one inch beyond, was atrophied, glistening and striated.

"There appeared to be nothing in the case, judging

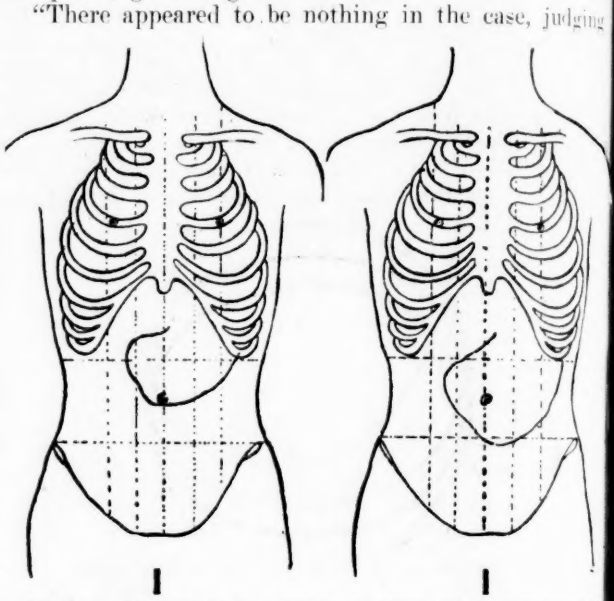

Fig. 7A.—The outline of stomach as given by the movements of the light flexible cable.

Fig. 7B.—The outline given by the movements of the less flexible cable.

from these appearances, incompatible with complete recovery from the gastric dilatation, as well as the *gastroptosis*, had the patient's strength been equal to the surgical ordeal. The case tends to show how slight may be the impediment which leads to these fatal results."[41]

THE GASTRIC MUCOSA.

The examination of stomach contents obtained by use of the gastric tube marked an epoch in the diagnosis of diseases of the stomach and intestines. The stomach contents inform us of normal and pathologic secretion, and food remnants contained in the contents give information as to the approximate degree of the motility of the stomach. Material lying freely in the cavity of the stomach is easily removed by means of the ordinary tube; the mucus adherent to the walls of the stomach in pathological conditions is only obtained with greater difficulty, if at all, in the ordinary methods. Beaumont has demonstrated the presence of this adherent mucus in the person of St. Martin. He found it particularly in "catarrhal" inflammations of the stomach.

Ewald *(Loc. cit.)* recommends lavage of the stomach for the purpose of "loosening the mucus which adheres

to its walls, partly chemically and partly mechanically," but, as stated, this was advised for therapeutic purposes.

Boas (I. Boas zur Symptomatologie des Chronischen Magen-katarrhs und Atrophie der Magenschleimhaut, *Münch. Med. Wochenschrift,* 1887, No. 42.) differentiated between the mucous form and the atrophic form of gastritis, which was a decided step in advance.

Fig. 8.—Duodenal sound with spiral end.

Einhorn (Dis. of the Stomach, N. Y., 1896), in his description of pathologic anatomy of chronic gastritis, states: "The mucosa is usually covered with a thick layer of tenacious mucus, presenting a yellowish-gray or slate color," but this refers more to the pathologic findings postmortem, and mention is not made of this as a diagnostic feature during life. Only the stringy mucus that is free in the gastric cavity and found on removal of the stomach contents by the tube, is considered; when mucus is not found in the gastric contents, it is differentiated as one of the other forms. The former condition is termed "gastritis chronica mucosa."

I reported an interesting case in 1893, of a man who suffered from periodic attacks of great flow, not of gastric juice, but glairy mucus. Between attacks but little mucus could be found. Many of the cases where mucus is found free in the cavity may be due to neuroses and other general conditions. (*North American Practitioner,* May, 1893.)

Leube, Penzoldt, Riegel and others have recognized, chiefly by the postmortem findings, that the mucous membrane is coated by the adhering and tenacious mucus, associated with pathologic changes in the mucosa.

Hemmeter[34] (p. 394) states: "The epithelial surface is in the various forms of gastritis, covered with a tough, glassy mucus, epithelial detritus, and sometimes pus."

It must be admitted that the question whether material removed from the stomach and consisting of mucus, food remnants, epithelia, leucocytes and bacteria had been lying loosely in the stomach or had adhered to its walls, is extremely hard to answer, if possible at all, but it is of the greatest diagnostic importance. Of like importance is the determination of the particular area of the stomach mucous membrane from which the material was derived. The diagnostic significance is not confined to the cellular elements and food detritus contained in the tough mucus, but a study of the nutritive variations of the culture-media will often determine the character or grade of infection. I have rarely been able, even by the prolonged use of the gastric needle douche under considerable pressure, to wash off the mucus covering the stomach wall. If, however, the fasting stomach is first thoroughly douched until the cavity is free from material, and the waste water runs off clear, and then the flexible, revolving sound is introduced and rotated, the adherent mucus masses are gently loosened and brought out. The region from which it is desired to remove this material can be readily determined by external palpation of the revolving sound

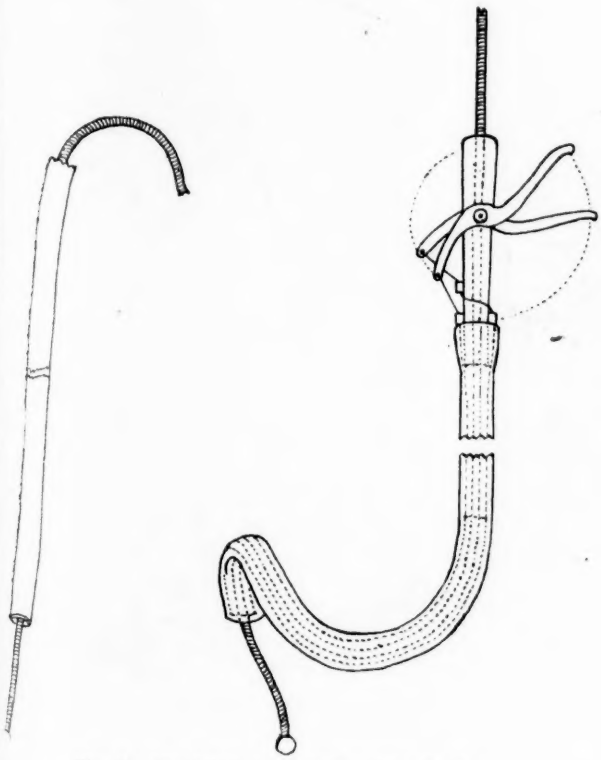

Fig. 9.—Duodenal sound before introduction.

Fig. 10.—Duodenal sound after introduction with silk threads drawn taut.

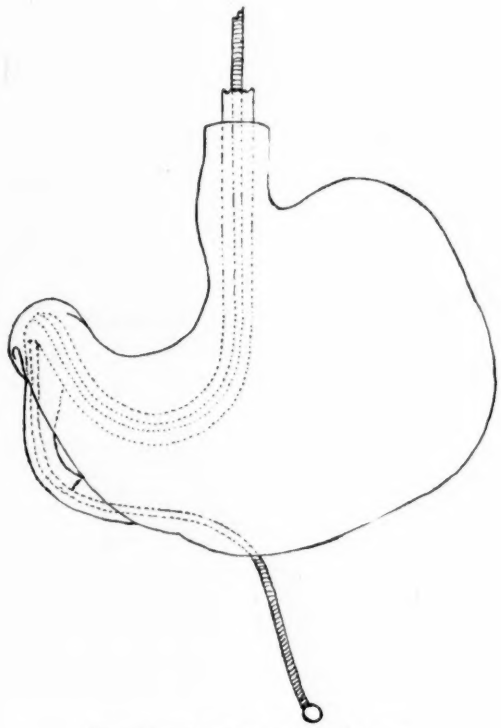

Fig. 11.—Duodenal sound in situ.

within the stomach. Before the revolutions of the sound can be felt externally, it is necessary that the end of the sound must have come in close contact with the mucous membrane from which the mucus is removed and found upon withdrawal of the instrument. The material thus obtained can then be used for examination. If it is desired to obtain material directly from a certain region of the stomach—for instance from the fundus, or greater or lesser curvature—the gyromele sound is introduced through a double stomach-tube. The cable passes through the wider tube while a strong silk thread is passed through the narrow tube. The thread is attached to the end of the longer tube which carries the cable. Upon traction of this silk thread, the cable can be directed to any selected area. By these methods we are enabled to make extensive chemic, microscopic, and bacteriologic studies of the stomach. I have used these methods constantly and successfully in my private clinic.[1 3 4 5 6 14 18]

cially since these conditions vary greatly in different individuals. However, before the sounding of the pylorus is proceeded with, the situation, size, distensibility, etc., of the stomach must be correctly determined. Inflation of the stomach with air greatly facilitates the sounding, because the end of the sound glides more easily along the distended than the collapsed walls. The sound having passed the pylorus, the air is allowed to escape from the stomach and this organ resumes its former shape. When the sound turns through the antrum pyloricum toward the lesser curvature, a procedure which can be palpated externally, it is withdrawn slightly, whereupon the end of the sound enters the antrum. The rotations of the cable are continued while the sound is cautiously pushed forward, and the latter can then be palpated, having assumed the S-shaped curve of the duodenum. At this time it is possible to aspirate the duodenal contents through the cable tube, which convinces of the presence of the end

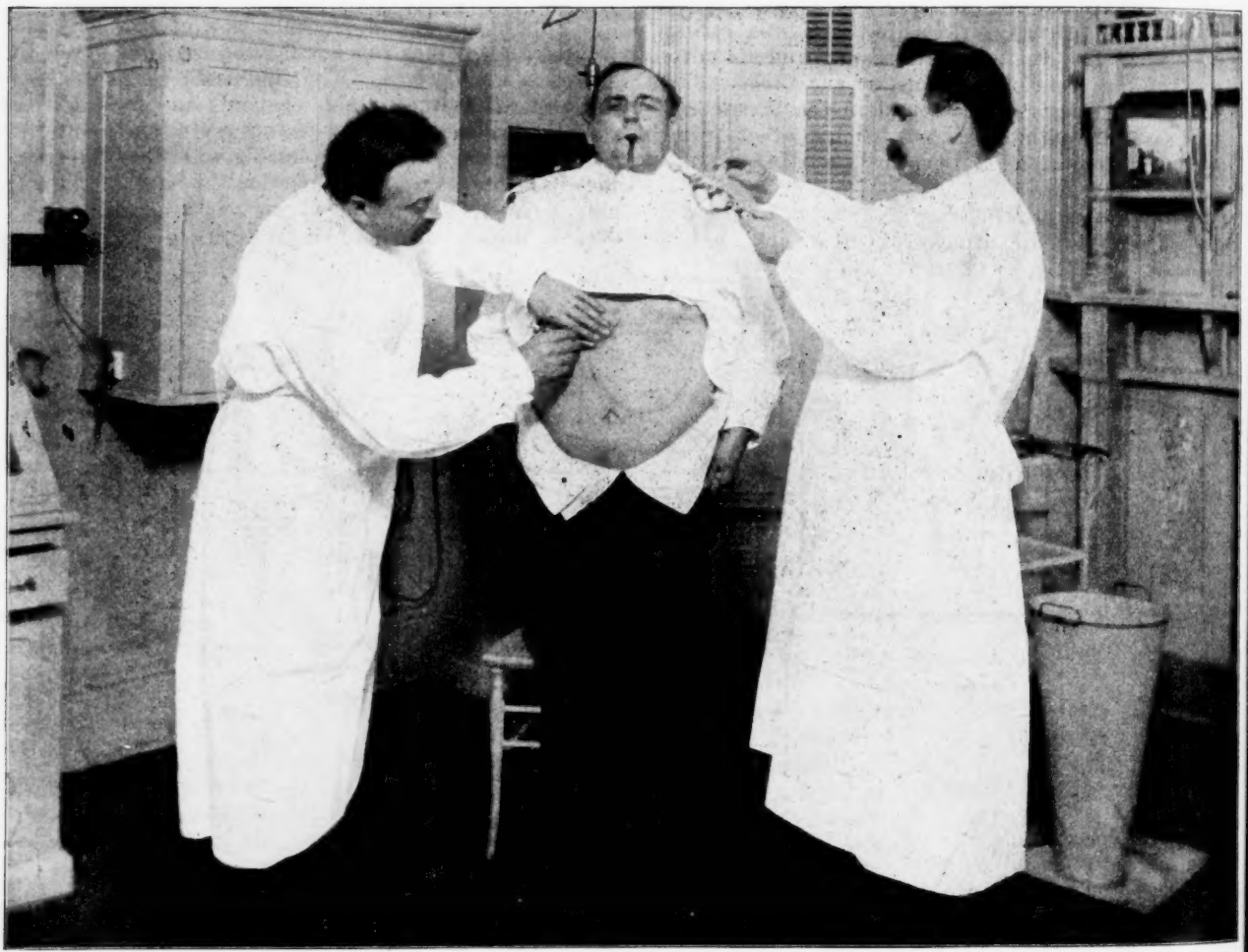

Fig. 12.—Palpation of the vibrations of the rotating cable within the stomach and outlining the contour upon the abdominal wall. (From the author's private clinic.)

PYLORUS AND DUODENUM.

In sounding the pylorus and duodenum with the gyromele, a more flexible cable is used, which terminates in an exceedingly flexible and elastic steel spiral. (Descriptions of the apparatus and its use were published in 1894 and 1895.)[1 2 3 4 8 9 14] The object of the spiral end is to give the sound greater adaptability, combined with a certain degree of resiliency. These qualities enable the sound to more easily adapt itself to the anatomical conditions, which is very desirable, especially since these conditions vary greatly in different individuals. However, before the sounding of the pylorus is proceeded with, the situation, size, distensibility, etc., of the stomach must be correctly determined. Inflation of the stomach with air greatly facilitates the sounding, because the end of the sound glides more easily along the distended than the collapsed walls. The sound having passed the pylorus, the air is allowed to escape from the stomach and this organ resumes its former shape. When the sound turns through the antrum pyloricum toward the lesser curvature, a procedure which can be palpated externally, it is withdrawn slightly, whereupon the end of the sound enters the antrum. The rotations of the cable are continued while the sound is cautiously pushed forward, and the latter can then be palpated, having assumed the S-shaped curve of the duodenum. At this time it is possible to aspirate the duodenal contents through the cable tube, which convinces of the presence of the end of the sound in the duodenum. Transillumination with the *x*-rays, gives very instructive and convincing pictures.

Instead of the simple rubber tube, the above-described double tube with the silk thread directing the end of the sound can be used. I have also devised an instrument in which the silk thread is in the same tube with the cable. (Figs. 7 and 8.) Upon traction of this thread, after the sound has reached the greater curvature, a double curve of the sound is effected, which directs its

end with ease into the pylorus. (Fig. 10.) Not all cases require duodenal sounding, but in many of them this exploration is not only of value, but indispensable for differential diagnosis, as the following cases will illustrate:

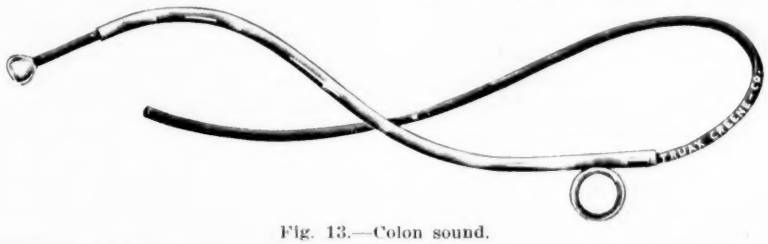

Fig. 13.—Colon sound.

CASE 6.—Dec. 5, 1893, J. J. O'C., was sent to me with a diagnosis of carcinoma of the pylorus. The general symptoms of this disease were more or less evident. Thorough sounding of the pylorus and palpation combined therewith excluded a carcinomatous affection of this organ. After a comparatively short treatment, the patient gained more than 10 kgs. This patient has not shown any gastric symptoms since 1894.[4]

CASE 7.—Another case is that of Dr. C. L. C., who was sent to me with a suspected stenosis of the pylorus, by Dr. Murphy. There existed in this patient an enormous dilatation of the stomach, great emaciation and debility; weight 54 kg. Sounding of the pylorus by means of the gyromele revealed a patulous, easily passable pylorus and no duodenal obstruction. The *x*-rays confirmed these findings. The patient was treated for myasthenia, and had gained 14 kg. at the end of six weeks. The last reports confirmed the diagnosis.

TECHNIQUE.

The technique of sounding by means of the gyromele is simple and easy. The cable is introduced in almost the same manner as the ordinary stomach-tube. Some experience is required to locate the fundus, greater curvature, pylorus and lesser curvature with certainty, but even the inexperienced find the introduction of the thin cable, covered with rubber tube the thickness of which reaches at the most 5 to 6 mm., and armed with the soft cotton tampon or sponge, easier than the introduction of the thicker and flabby stomach-tube. This is particularly the case with patients unused to intragastric methods. The steel sound serves here the same

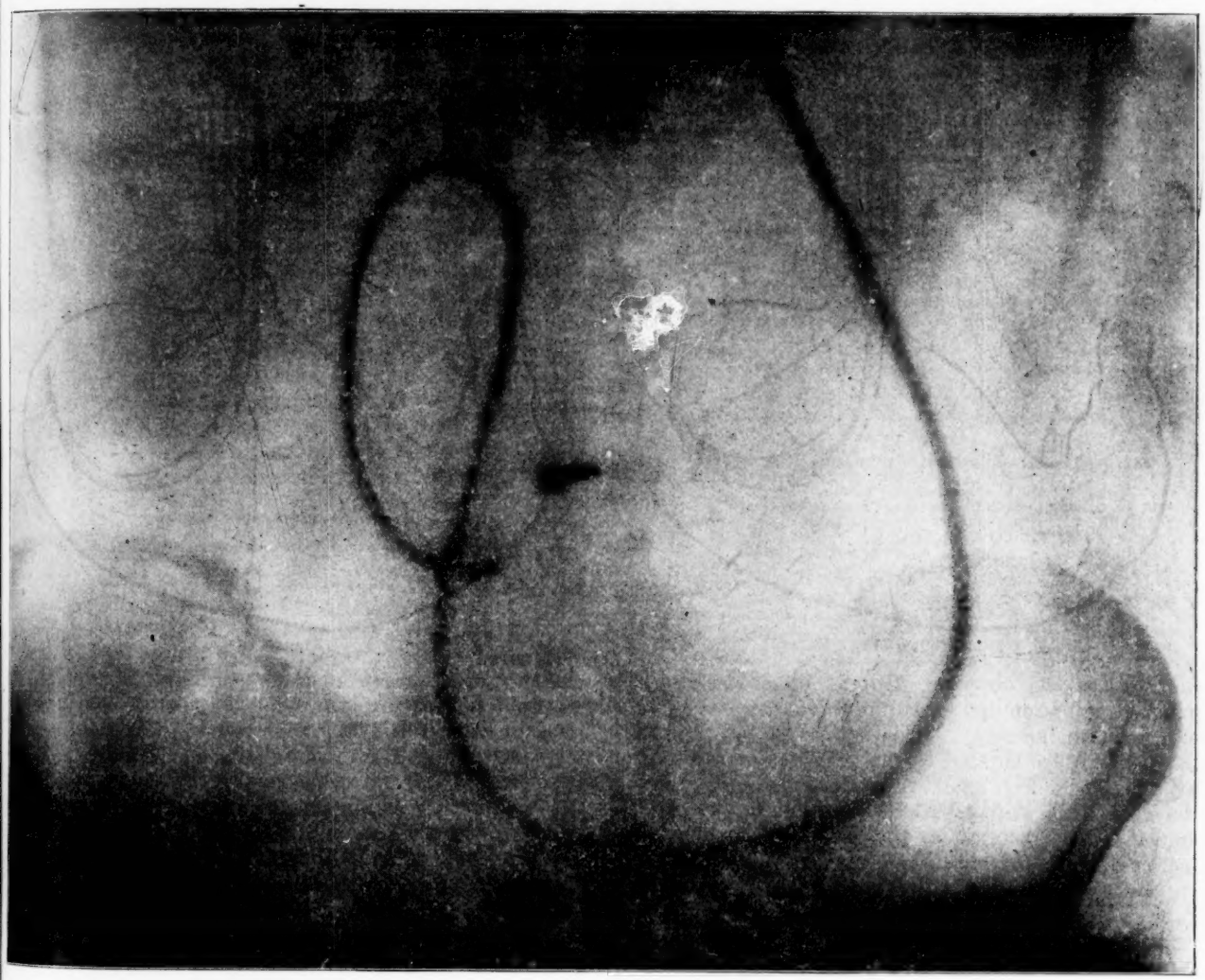

Fig. 14.—X-ray of the duodenal sound in situ. The stomach is enormously dilated and markedly myasthenic, which accounts for the extraordinary excursion of the stiff cable, and the stomach is thereby displaced to the left.

purpose as the formerly much-used "mandrine" of the Germans, but because of its greater flexibility and elasticity, it conforms more easily to any intervening curves.

The rotating cable is covered the distance from mouth to cardia with a rubber tube. In this tube, the cable moves freely, and thus little friction is caused. Since this surrounding rubber tube remains stationary, a pushing to and fro of the cable is unnoticed by the patient. As soon as the tampon on the end of the cable has reached the greater curvature, it meets slight resistance, the cable bends, and the end glides along the greater curvature until at the antrum pyloricum, or lesser curvature, it again meets resistance. Now, the stomach is moderately inflated with air and the cable pushed slowly forward; its end now turns—as has been observed by the *x*-rays—toward the left and upward along the lesser curvature. Thus the cable is seen to describe an irregular circle, influenced by the contour of the stomach. Pushing the cable still farther into the inflated stomach, it will bend into the fundus, there adapting itself to the dome thereof. All of these phenomena can be observed with as much certainty by external palpation and auscultation of the rotating cable end, as with the *x*-ray. This holds true, even of those parts which are covered by the left lobe of the liver or by the ribs. (Fig. 12.) By following the rotations of the cable end with a skin pencil the contours of the stomach are drawn upon the abdominal surface. In lean individuals the rotations may be perceived by inspection; in fat subjects, it is advisable to put the cable in more accelerated motion, in order to palpate the rotations. Variations in diameter of the stomach walls influence the degree of the vibrations considerably, and I have been often able to convince myself of this fact postmortem, as reported. Determination of the various grades of thickness, tension and tonus of the gastric walls is arrived at by sounding with cables of various strengths. The observed curves of distention give, in comparison with each other, the desired information.

In sounding the sigmoid flexure through the rectum, different circumstances had to be considered, and for this purpose a modification of the gyromele was required (Fig. 1.) The technique of sounding is similar to that of sounding the stomach and duodenum. It is therefore unnecessary to dwell especially on the sounding of the colon, and hence, I only mention it here.

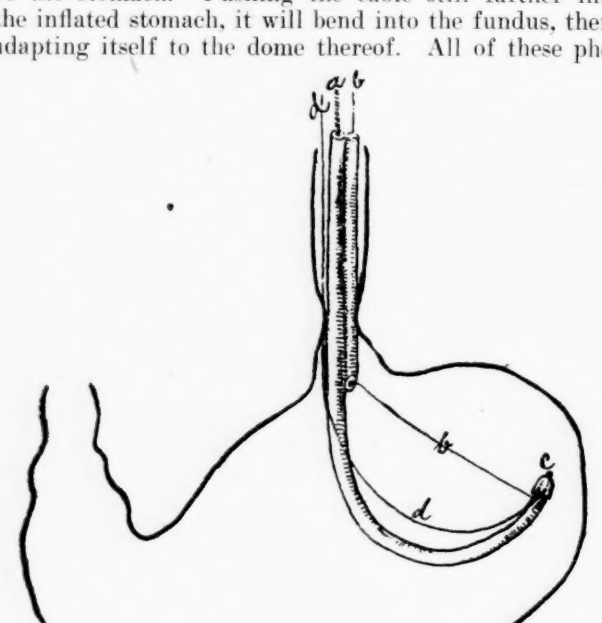

Figure 15.

X-RAYS.

By the use of the *x*-rays for transillumination of the body, diagnosis by means of the gyromele cable combined with palpation is made more certain and easy. The first attempts to observe the introduced sound *in situ*, with the aid of the *x*-rays, were made by me in the spring of 1896. The degree of density of the steel sound is seen to interrupt the rays and give a distinct contour of the sound. In May, 1897, I demonstrated the transillumination of the body with the sound introduced and put in motion, before the Illinois State Medical Society,[39] and I have since repeatedly called attention to the importance of this procedure. Different substances contained in stomach and other rubber tubes, as mercury, bismuth salt emulsion, etc., have been used with the intention of making the contours visible during transillumination with the *x*-rays. The visibility and accuracy of these contours, obtained after introduction of my steel cable, can be observed in the accompanying half-tone illustration. The clearness of the picture has been somewhat impaired by its reproduction. The solid cable is plainly visible as a sharp line, while the hollow spiral end is represented by a more indistinct shadow; in fat and old individuals it is often impossible to distinguish the spiral at all. It is extremely interesting to observe the excursions of the rotating cable with the aid of the *x*-rays or the entrance of the end of the cable into the pylorus or duodenum. I have often found the borders of the stomach, previously marked by lead roll fastened upon the abdomen, confirmed by transillumination. The ensiform appendix and umbilicus were marked with metal buttons, and their position was also confirmed.

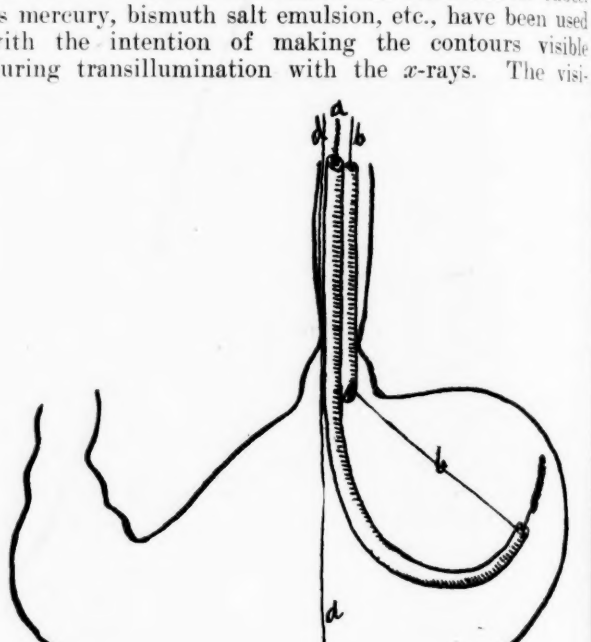

Figure 16.

Measurements were made by graduating the cable with lead shot. All those experienced in the *diagnostique* of the stomach and intestines will readily appreciate the value of this method. It is easily seen, when applying bismuth salt emulsion, by means of the gyromele, that the walls of the stomach and esophagus

become thoroughly coated with a stratum of the emulsion.[1 7 9 30]

BACTERIOLOGY.

What has been said in regard to the removal of material from portions of the mucous membrane for pathologic examination will give a clear idea of the method used in taking cultures for bacteriologic examination from any selected portion of the gastric mucosa, without contamination from the mouth, esophagus, or other portions of the stomach.

The cable is enclosed in a tube and the end covered with a rubber cap (Fig. 15) which is attached to a string that passes outside along the tube, and when the desired point is reached the cap is pushed off and withdrawn. (Fig. 16.) After a culture is taken from the walls, the cable is drawn into the tube again and the instrument withdrawn from the stomach.

A portion of the rubber end of the tube is then cut off to prevent contact of the sponge with any material which might enter it as it is being withdrawn. The sponge is then pushed out and inoculations made in the usual manner. I have used in special work, requiring great accuracy, a second outside tube that reached to the cardia only. This forms a protection sheath to the above-described tube that is pushed into the stomach. For practical purposes, the simpler method is sufficient.

It is not possible to make accurate bacteriologic investigation of any kind where contamination takes place. This is one of the chief principles upon which modern bacteriology rests. A stomach-tube introduced into the stomach and the stomach contents examined for bacteria gives no scientific data of the flora of the stomach. The micro-organisms in the lumen of the stomach, mixed with food, are transient and, without a constant factor, we can make no accurate deductions. The colonies develop upon the walls of the mucosa, in the bed of mucus, food detritus and exfoliated cells, which adheres with glue-like tenacity. This furnishes an opportunity for bacteriologic examination if we can secure such material uncontaminated. I have already referred to my studies of the gastric flora under various pathologic conditions.[1 3 4 6 11 12 16] The normal stomach, as previously shown, does not permit germs to develop upon the mucous walls, although germs may be found free in the lumen. From a series of experiments upon dogs, my conclusions were that gastritis is caused chiefly by the growth of a variety of germs that develop upon the walls of the stomach; the type of inflammation was not dependent on special forms, but on the groups that predominated. I have verified the accuracy of these methods by cultures taken from the walls of the mucosa during operations for gastrostomy, gastroenterostomy and pylorectomy. Gehrmann,[44] referring to the use of the gyromele in bacteriology, states: "It is apparently the only way of attaining definite data as to bacteriology of the stomach."

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A NEW OPERATIVE METHOD TO EXPOSE THE SEMINAL VESICLES AND PROSTATE FOR PURPOSES OF EXTIRPATION AND DRAINAGE.

A PRELIMINARY REPORT.*

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NEW YORK CITY.

The extravesical incisions heretofore employed to expose the prostate and seminal vesicles are the Von Dittel, the Zuckerkandl and the Kraske.[1] In my book on diseases of the genito-urinary system, recently published,[2] I have fully detailed these operations, consequently in the present connection little attention will be paid to them aside from citing their surgical shortcomings.

In all these operations the trunk of the patient lies horizontally. In the Zuckerkandl operation the ordinary lithotomy position is maintained. In the other two the patient lies on the abdomen, the thighs hanging vertically downward over the edge of the table. The space afforded by the Zuckerkandl incision is too limited to allow a surgeon to do any accurate work in connection with organs so deeply situated as the seminal vesicles. The operation is bloody and tedious, numerous vessels having to be ligated in inaccessible positions. Both the Von Dittel and the Kraske operations are lateral ones, consequently only the right or left seminal vesicle and corresponding side of the prostate, as the case may be, are well exposed during a given operation. The Von Dittel operation was designed especially to expose the prostate, and it also does not serve the purpose of exposing sufficiently the region occupied by the seminal vesicles. Besides being unilateral the Kraske operation is formidable, owing to the extent of the muscular structures, the division of which its performance necessitates. When the seminal vesicles and prostate are in this manner exposed, they lie at the bottom of such a deep wound that Redygier, in order to satisfactorily manipulate them, found it necessary to make the operation still more formidable by advocating a transverse cut across the sacrum just below its third foramen.

Although I have had considerable personal experience with these operations in exposing the seminal vesicles, I have found them all very disappointing, and this has led me to originate the procedure which I am now to report, and which I have found eminently satisfactory. After describing my method in detail, I will report five cases in connection with which I have practiced it. These five represent my experience up to date, with the operation. The method is as follows:

In the first place it must be remembered that the perineal and pelvic structures to be submitted to operation are soft, yielding and elastic. In order to facilitate an accurate dissection through such tissues they should be made to assume as stable a position as possible, and that can only be accomplished by putting them on the stretch, thus making them taut. This can be accomplished by flexing the thighs sharply, as in the extreme lithotomy position. The patient with his thighs so flexed is put belly downward on a Trendelenburg

* Read before the New York County Medical Association, Feb. 18, 1901.

1. In this connection mention should be made of the interesting surgical work of Dr. Hugh Young, of Baltimore, who has on two or more occasions exposed and removed the seminal vesicles by opening the abdomen and flexing the bladder forward.

2. The Macmillan Co., New York, 1900.

table, the buttocks protruding somewhat over the end while the flexed thighs straddle the table. The end of the table is then inclined upward quite sharply. In this position the body is maintained by sand bags, strappings and the attention of attendants. Figure 1 represents the position described. It is generally better to put the patient in this position after he is under the influence of an anesthetic. Dr. Stone, my house surgeon at the city hospital, has had a table made with notches at the sides to take the knees, which device may prove of some advantage in steadying the body. An antiseptic, lubricated cotton tampon, to which a tape is attached, is then pushed into the previously cleansed rectum, well up into the region of the sigmoid, in order to guard against bowel leakage during the operation. In the Von Dittel operation a catheter is maintained in the urethra to mark the position of the canal during the performance of the operation. In my operation no catheter is necessary or advisable. I make it a point, however, to see that the bladder has been emptied just before the administration of the anesthetic.

The next step is the external incision. This consists of two somewhat converging longitudinal cuts, which are connected at their dependent and proximal extremities by a transverse cut. The longitudinal cut to the operator's right begins a little above the upper

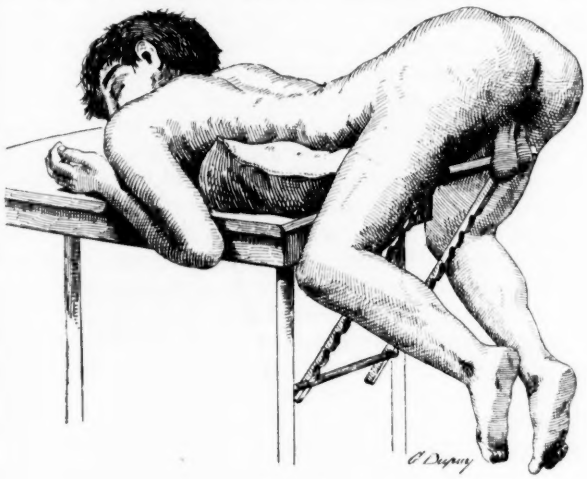

Fig. 1.

border of the patient's coccyx and just inside the body of his right ischium, and extends downward and slightly inward, keeping just within the border of that bone, passing the tuber ischii and ending somewhat below that tuberosity at a point laterally and about three-fourths of an inch anteriorly to the anterior margin of the anus. The longitudinal cut to the operator's left corresponds exactly to the one just described, it lying in like manner along and just within the body of the left ischium. The transverse cut connects the converging ends, dividing the perineum transversely about three-fourths of an inch anterior to the anterior margin of the anus. Figure 2 shows the line of the incision. The line of incision being so marked the next step is to incise deeply along the longitudinal cuts, going through the fatty tissue of the ischiorectal space and dividing above a few of the lower fibers of the gluteus maximus muscle. The transverse cut is then deepened, the anterior layer of the deep fascia being cut through. Great care should be taken in cutting down transversely to keep sufficiently away from the anus to avoid wounding the sphincter muscle. The forefinger of the operator's left hand should next be inserted into the rectum, the ball of the tip being turned downward against the anterior rectal wall, while the corresponding thumb presses against the loosely dissected rectum, the hand at the same time exercising upward traction as illustrated in Figure 3. The gut is thus held up in the grasp of the thumb and forefinger, while with his right hand the operator employs the knife to dissect more deeply, cutting through the levator ani muscle and the visceral layer of the pelvic fascia. It must be borne in mind, in this connection, that the pathway of the dissection, which is between the urethra and rectal wall, is very narrow. The forefinger in the rectum acts in this deep dissection as a most important guide. The stroke of the knife in making it should be inward and at the same time toward the rectal wall. The tip of the finger should always be moved so that it is just behind the portion of the rectal wall where the dissection is being made. This being done there is no danger of perforating the rectal wall, and at the same time the direction of the dissection, keeping along close to the rectal wall, is such that the urethra escapes damage. In case the lower portions of the lateral incisions have not been deep enough to sever the fibers of the levator ani muscle they can now be made so. This accomplished, the rectal flap of the wound can be still further raised. The knife is then for the time being discarded and the operator's right forefinger inserted along the dissection, keeping just below the rectal wall till it passes through

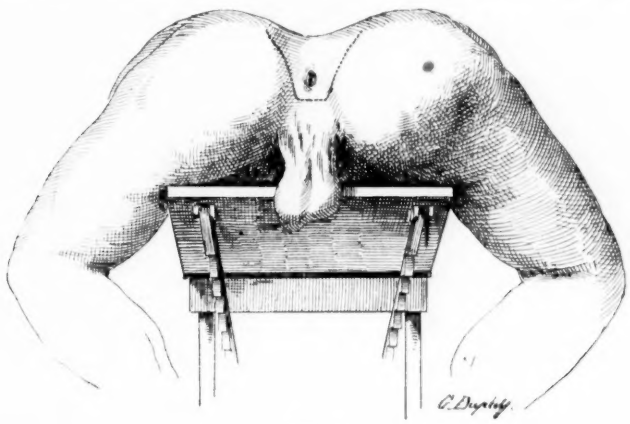

Fig. 2.

the cut in the visceral layer of the pelvic fascia and enters the lymph space which lies between the prostate and the rectal wall. This space being reached, the left forefinger should also be passed in alongside the right and the path of the wound over the prostate divulsed by separating the fingers. This much accomplished, it is comparatively easy, by a continuance of this separating process with one or both fingers, to strip the loose rectal connections off from the seminal vesicles and the posterior bladder wall, leaving those parts exposed to direct surgical attack. The operation for which the incision was undertaken being completed, the walls of the wound should be carefully adjusted by deep sutures, so as to bring the rectum back into its original position. A space, however, for gauze packing, should be left in the middle portion of the transverse cut. If the sutures about the rectal portion of the wound are not deep, so as to allow the sphincter to become firmly united to the outlying structures, some tendency to rectal prolapse may eventually develop. Temporary retention of urine demanding the passage of a soft catheter is very apt to develop, especially in cases where considerable gauze packing is left connecting the deep track of the wound with the

surface. As the tissues in this part are well nourished, first-intention is the rule.

This operation renders direct surgical attack feasible in many rebellious forms of seminal vesicular disease which have formerly been left unaided, or which have responded unsatisfactorily to palliative measures of treatment. Acting on this assumption I have in this manner opened and drained thickened and catarrhally-distended seminal vesicles, have freed them from dense inflammatory adhesions, have removed a neoplasm from the interior of one of them, and have entirely extirpated one. Aside from extirpation of the seminal vesicles, much of the surgery I am now doing in this connection is in the nature of pioneer work. As the patients on whom I have practiced it are, however, still in the hospital, convalescent, or have been only recently discharged, it is as yet too early to draw conclusions as to its true surgical value. I have accordingly called attention in the title of my paper to the fact that my report is a preliminary one. This specification it is needless to say does not apply to my method of operating, the advantages of which are established. The operation, as I have stated, exposes the prostate most satisfactorily, making its removal comparatively easy. Although I have removed a very large number of pros-

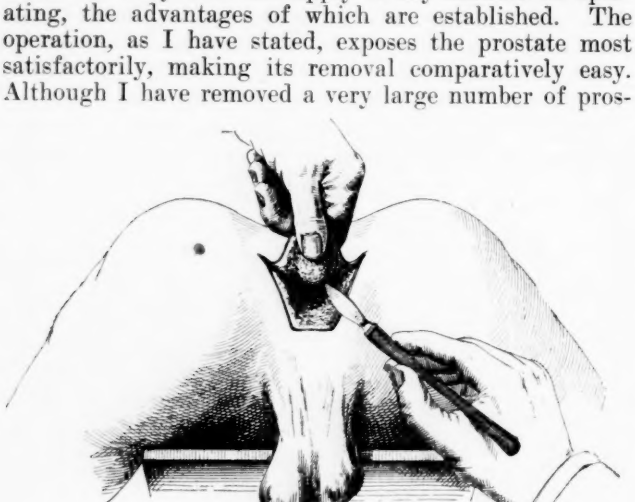

Fig. 3.

tates from those suffering from the effects of prostatic hypertrophy, I have almost uniformly done so in connection with a suprapubic or perineal cystotomy, and shall probably continue to do so in spite of the easy route afforded by the operation just described, since I consider drainage and treatment of the bladder in that class of cases a most important feature in the after-treatment, the accomplishment of which is impossible in connection with an extravesical operation. For suppurative conditions in connection with the prostate the operation I have described would be of practical value.

Up to the present time I have employed my operative method on five occasions. The patients have all recovered most satisfactorily, their stay in the hospital averaging about three weeks. In three of them the purpose of the operation was to expose chronically diseased seminal vesicles for incision and drainage. In these instances free longitudinal incisions into the diseased sacs were made and, were the interior of the organs was found to be granular from chronic catarrh, such tissue was removed by gentle curettage. In all cases the cavities of the sacs were left packed with gauze, while gauze drainage to the surface of the wound was established. Wherever the sacs were found bound down by perivesicular inflammatory adhesions, such were broken up, leaving the organs free. This is an original method of treating chronic seminal vesiculitis. I think it will prove of much value in connection with very aggravated cases. As my experience with it is as yet, however, very recent, I will not at this time comment further on it.

One of my cases represented an instance of extirpation of a seminal vesicle, while from another I removed a neoplasm from the interior of a seminal vesicle, leaving the sac intact, the first operation of its kind on record. The neoplasm in question was an adenoma having, however, associated with it certain evidences which made the examining pathologist fearful of the coexistence of carcinoma.

MYASTHENIA GRAVIS PSEUDOPARALYTICA.

(ASTHENIC BULBAR PARALYSIS.)*

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In 1877, Wilks, of Guy's Hospital, London, published the report of a case of "Bulbar Paralysis without Anatomical Changes." "The patient, a girl, could scarcely move about, spoke slowly and had strabismus. For a month she remained in much the same condition, then all the symptoms became aggravated and in three days they assumed the characters of bulbar paralysis. There were indistinctness of speech, difficulty of swallowing and inability to cough. Respiration became increasingly difficult, and death rapidly supervened." The next year Erb reported three cases in which the chief symptoms were a striking paresis of muscles, especially of mastication, of the neck and the eyes (ptosis), less of those of deglutition, the tongue and extremities.

During the twenty years that have passed since Wilks reported this interesting condition, 62 cases have been reported, including our own, most of them (46) from the continent of Europe—10 from England and 6 from this country. Though there has been a notable lack of unanimity in the nomenclature of this affection, the clinical features of the cases recorded by the various observers have been so strikingly similar in all their salient features, and the results of the autopsies have, with one or two doubtful exceptions, so uniformly presented a complete absence of all signs of organic disease both macroscopic and microscopic that there can be no reasonable doubt that practically all the cases belong to the same category.

To the earliest observers the symptoms which attracted the greatest attention were those referred to the muscles innervated by the bulbar nuclei, hence whatever the lesion or disturbance of function might prove to be, it was naturally referred to the bulb and the various designations of "bulbar paralysis without anatomical changes" (Wilks, 1877) and "asthenic bulbar paralysis" (Strümpell, Church, Dana, and Collins, in "Twentieth Century Practice") were given to the disease.

In 1890, Shaw[2] reported a characteristic example of the disease. In this case he drew particular attention to the weakness and exhaustibility not only in the muscles innervated by the bulb, but also in the muscles of the eyes and extremities. During recent years this weakness and exhaustibility of the muscles generally has taken perhaps a more important place in the symptomatology of the disease than that formerly given to the bulbar symptoms.

In 1895, Jolly[3] reported a case under the title of "Myasthenia Gravis Pseudoparalytica," and he seems

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to have been the first to use this name. Recently the English writers, notably Buzzard, with Sanger Brown in this country, have adopted the same title. While it may be claimed that such a title is unscientific, one may urge that it is not misleading, that it suggests no pathologic conditions that might prove to be erroneous, and that it refers especially to the characteristic clinical feature of the disease.

Etiology.—As to the etiology, practically nothing is known. Sex seems to play no important part. It has been observed most frequently in young adults. A few cases have been preceded by influenza, typhoid fever, prolonged worry or mental or physical exertion, but in the great majority of the cases the patients have been strong healthy individuals, free from any apparent taint, hereditary or acquired, before the attack, and in no instance recorded has any observer been able to attribute the disease to any definite cause. Rarely has there been a family tendency to nervous disease. Syphilis and alcohol seem to play no part as an etiologic factor.

Pathology.—At present nothing definite is known as to the true nature of the disease. In seventeen instances autopsies have been held by competent observers, with the practically uniform result that no lesions have been discovered either in the affected muscles or in any part of the nervous system, central or peripheral, that were sufficient to account for the symptoms. Careful and extensive microscopic examination of the whole nervous system by the most modern methods failed to discover any departure from the normal in 11 of the 17 autopsies; in the other 6 the lesions were slight and inconstant, and consisted of slight degenerative changes in the intramedullary portion of the anterior roots in one case, in the cells of the motor gray matter from the oculomotor nucleus through the whole length of the cord in another, of partial disappearance of the chromatophilic elements of the third, sixth, seventh and twelfth nuclei in another, and of slight medullary hemorrhages that possibly occurred while dying in the other three. By some the disease is considered to be toxic, the result of disturbed metabolism, and it is possible that the poison produces changes in the cells which can not be observed under ordinary modes of investigation, but which may in the future be demonstrated by more recent methods of examination.

An interesting experiment by Dr. Farquhar Buzzard[4] goes a long way to prove that the disease is one of the nervous system and not a myopathy. In a case under his observation he completely exhausted the biceps muscle, by faradic stimulation until movements were no longer visible; he then immediately applied galvanism and a prompt and vigorous contraction occurred. This tends strongly to show that the exhaustion was not in the muscle but in the conducting power of the nerve. The absence of muscular atrophy also militates against the myopathic nature of the disease.

Symptoms.—The characteristic features of the disease are the weakness of the muscles and the rapidity with which they become exhausted, the tendency to affect not only the bulbar muscles but also those of the eyes and extremities, the occurrence of remissions and exacerbations with a tendency to vary from day to day, the presence of the myasthenic reaction, the retention of intellectual and sexual power, and the absence of atrophy and fibrillary twitching, of sensory disturbance, of reaction of degeneration, of bladder or rectal troubles, or of interference with the reflexes. The onset is usually gradual, but sometimes rapid. Though the weakness may begin in any muscle, the cranial nerve muscles usually suffer first, and in the majority of cases the earliest symptom is either ptosis or diplopia; for this reason many of these patients first consult the oculist. The ptosis or diplopia may be slight, may be intermittent or may disappear altogether for an indefinite period, to recur again in a marked degree; after a time it usually becomes a permanent symptom which varies, however, from day to day, and tends to become worse in the evenings. The liability to fatigue of the levator palpebræ is readily shown if the patient looks steadily upward at an object held above his eyes, when the lids are seen to gradually droop until the eyes are nearly closed. There may be weakness of any or all of the ocular muscles, resulting in complete ophthalmoplegia.

Suckling[5] published two characteristic examples under the title: "Functional Ophthalmoplegia with General Paralysis and Implication of Cranial Nerves in Young Women." In these cases there was a great tendency to oscillatory movements of the eyeballs when fixed for a time to their limit in the direction of the weak muscle. In some instances the patients can not raise their eyebrows, wrinkle the forehead nor close the eyes tightly; in others the weakness of the lower facial muscles is shown by a calm, rather expressionless countenance. Sooner or later the muscles innervated by the bulbar nuclei are affected; weakness in these muscles may be the earliest symptom, or it may not appear until near the end of the case. It is owing to the prominence of these bulbar symptoms that the disease has been designated "asthenic bulbar paralysis." All the symptoms of true bulbar paralysis may be present, but they are usually less marked, nearly always bilateral and are characterized also by exhaustibility and variability from day to day. There is difficulty in biting, mastication, deglutition and articulation; the palate reflex may be weak and on phonation the soft palate but slightly elevated on one or both sides; there may be inability to protrude the tongue beyond the teeth, or if projected to its normal extent it soon tires, begins to quiver and recedes into the mouth; difficulty in sucking, blowing or inflating the cheeks may be observed. In many cases the patient begins his meal all right, but in a few minutes, though still hungry, he is compelled to rest owing to the weakness in his muscles of mastication, or before he has satisfied his hunger he is no longer able to swallow and fluids regurgitate through his nose. The difficulty in articulation is shown by the weakness of the voice after use. At first the patient can speak clearly and distinctly, but his voice gradually grows weaker until he can no longer articulate; after a short rest he can proceed as before. The disease is prone to affect the respiratory muscles, producing attacks of dyspnea of an alarming character; indeed, the majority of the deaths have been due to asphyxia from this cause. The rapid fatigue of the respiratory muscles is well shown in our patient, who lost three-quarters of an inch in expansive movement after eight or ten inspirations.

The muscles of the head and neck may be affected with a tendency of the head to fall backward. The extremities are weak, the patient may be unable to raise his arms above his head, or, if he can do so, he can not maintain them in this position beyond a few minutes when they gradually fall to his side, but after a brief rest he may be able to raise them as high as before. His grip is feeble. In writing he begins rapidly, but after a few lines it becomes slower and labored until he is compelled to stop. The patient may be able to walk well for a short distance, then his gait becomes

feeble and irregular until he is forced to sit down and rest; he may be unable to lift one knee over the other. In some cases the weakness is so marked that the patient is unable to raise himself out of bed or to rise from a chair.

In addition to the weakness and exhaustibility, with in some cases a permanent paresis, which may affect any of the voluntary muscles, other striking features of the disease are its tendency to be aggravated in the evening, especially after exercise, the occasional exaggeration of the weakness when the patient's attention is drawn to his condition and the better performance of involuntary than voluntary movements. Remissions and exacerbations are common and the patient may for weeks, months, or even years—five years in Dreschfeld's[9] case—appear to have made a complete recovery and then, perhaps suddenly, there is a recurrence of all the symptoms.

Myasthenic Reaction.—The electrical reactions in the affected muscles are interesting. If the muscle is not fatigued by voluntary exertion there is a prompt and good response to faradic stimulation—the vigor of the contraction, however, varies in different muscles and in the same one at different times. As the applications of the current are rapidly repeated, the movements gradually decline in extent and force until in a few minutes contractions are no longer visible, but after a minute's rest vigorous contractions are again induced by faradism. This peculiar exhaustibility of the muscles to the faradic current is called the myasthenic reaction, and since it was first described by Jolly it has been found to be present in the majority of the cases in which the examination was made. Even after exhaustion to faradism a vigorous contraction is at once induced by galvanism. In no case has reaction of degeneration been demonstrated.

It is very striking that in a disease with such pronounced and characteristic motor defects, which often lead to a fatal termination, there remains throughout a complete absence of so many of the well-known signs of organic disease in both the nervous and muscular systems. There is no atrophy of the affected muscles and fibrillary twitchings are absent; the special senses are unaffected and intelligence is good to the end, though in a case reported by Collins there was rapid exhaustion of the senses of sight and hearing; there are no sensory or trophic disturbances; there is no ataxia and the pupils are normal. There are no bladder or rectal troubles and the superficial reflexes, arm and knee-jerks are normal, or present no material change; in a few cases it is said that the knee-jerks became exhausted after repeated tappings.

The course of the disease is characterized by the tendency to remissions and exacerbations already mentioned. In some instances the affection is almost limited to the bulbar muscles, but in most cases it is extensive in its distribution. The duration is indefinite; it may be chronic, as in Dreschfeld's patient who died from respiratory paralysis fifteen years after the onset of the disease, and in one of Buzzard's, who is still living eight years after the symptoms first appeared; on the other hand, it may be very rapid, as in an example reported by Widal and Marinesco,[6] where death occurred fourteen days after the onset of the first symptoms.

Diagnosis.—The diagnosis must depend upon the recognition of the characteristic features of the disease, the weakness and early fatigue of the muscles, the implication of other muscles than those innervated by the bulbar nuclei, especially those of the eyes and extremities, the tendency to remissions and exacerbations and the myasthenic reaction, with normal intelligence and the absence of atrophy and fibrillary twitchings, of sensory disturbances, of bladder and rectal troubles while the reflexes are normal. It is perhaps most likely to be mistaken for hysteria, neurasthenia, true bulbar paralysis or multiple neuritis, but a careful examination associated with the history of the case should prevent one falling into error. In this connection a case was recorded by Allbutt:[7] "Miss ———, aged 18, caught cold six months previously, followed by stiffness of the tongue and jaws; this stiffness remained for a few weeks and then disappeared. She now moves her tongue and jaws and indeed every muscle of the face, throat and orbit normally. Of late she has begun to talk oddly, 'as if with a potato in her mouth.' This gets worse as she proceeds, when her utterance becomes involved and she stops." She had difficulty in swallowing, "she choked over her meals, more when she was tired, that is, at the later meals of the day." No evidence of hysteria or other neurosis or of palsy or atrophy was found, nor any other evidence of organic disease, except that the "forefinger of the left hand seemed weak and fumbling." A diagnosis of hysteria was made and for two or three weeks she made considerable improvement. Then one evening her symptoms, especially the swallowing, grew worse again and next morning before breakfast "she suddenly fell to the ground, was convulsed, turned blue and died at her mother's feet." Such a case in the hands of so competent a diagnostician as Professor Allbutt shows how readily the true nature of the disease may be overlooked, especially when the symptoms are so apparently indefinite and so variable as in the example recorded. A discussion on the differential diagnosis between myasthenia gravis and the various diseases with which it may be confounded is hardly necessary. As a rule a careful examination of the patient will render the exclusion of other diseases which may resemble it comparatively easy.

Prognosis.—Of the 62 recorded cases, 23 terminated fatally, the average duration of life after the development of the first symptoms being about 1½ years. As in many instances the duration is protracted, and as several of the reported cases have come under notice only during the past year, it will be evident that these figures probably under-rate the true gravity of the disease. It is probable that complete recovery sometimes takes place. Attacks of dyspnea from weakness of the respiratory muscles are of the gravest possible omen, and the patient's friends should be warned that death may occur suddenly during one of these attacks.

Treatment.—No specific treatment is known. Complete rest, mental and physical, and freedom from all forms of excitement should be enjoined. Various drugs have been tried, but there is no evidence to show that any drug has a beneficial effect on the disease. Strychnin has naturally been tried, but so far without result. One patient of Buzzard's made a great improvement under thyroid extract, but in another it was given without benefit. Faradism appears to have done harm, while galvanism and massage did no good. General tonics, as iron, arsenic and cod-liver oil may be of use in maintaining the general health.

REPORT OF CASE BY DR. J. R. BUIST.

According to the diagnosis of Dr. E. G. Wood and myself, the case we are about to report should be put in a class of nervous affections, the prominent feature

of which is a peculiar paralysis, or, more strictly speaking, a paretic state of many muscular groups, upon exertion rapidly showing fatigue, soon succeeded by absolute loss of power if the action of the muscles is persisted in.

It is only in the last eight or nine years that a real clinical entity has been accorded this abnormal state of the neuromuscular apparatus. As much as twenty years ago some cases first attracted the attention of medical men in Germany and England, and were reported under different designations.

The foremost neurologists of Germany, France and England are, at the present time, evincing very great interest in these cases, and studying hard to solve the hidden problems of causation and pathology.

Let us recollect that most forms of disease when first recognized, appear infrequent, but as familiarity with the clinical features increases, we find that particular cases are not so uncommon. At all events we know that this will be the first case ever described and reported in the Southern States, and the sixth ever given to the profession in America. Dr. Wood and myself are glad that this distinction will belong to the Nashville Academy of Medicine.

All the articles written on this subject unite in stating that the first reported case that came to an autopsy was that of Dr. Wilks of Guy's Hospital, published in 1877. The examination of the brain and spinal cord were carefully and fully conducted, and as no lesions of these structures were found, Dr. Wilks gave his case the name of "Bulbar Paralysis without Anatomical Base."

Along about the same period Erb of Germany published one or two cases. No other case was reported for ten years after. From 1887 to 1893 quite a number were reported in Germany, France and England. About that time Jolly of Berlin appears to have been the first to use the term "myasthenia gravis pseudoparalytica." In 1893 Dr. Dreschfeld published a case under the heading "Polio-encephalo-myelitis without Anatomical Foundation." In 1896, Collins[1] uses the term "asthenic bulbar paralysis." Since then the text-books of Church and Peterson, Allbutt's "System of Medicine," and some other recent works employ the designation of "asthenic bulbar paralysis." Dr. Buzzard of London, in a lecture last March, used the term "myasthenia gravis," and so does Dr. Sanger Brown of Chicago in the last published case.

To our minds this term "myasthenia gravis pseudoparalytica" is by far the most appropriate yet employed. Without committing us to any theoretical doctrine of its etiology and pathology, or involving us in the necessity of localizing the disease, it simply gives us the most conspicuous clinical features.

Mr. E. R. R., white, 34 years old, a native of Giles County, Tennessee, and a resident of Carthage, Tenn., came under our care on Nov. 23, 1900.

Family History.—His father is said to have been an active and healthy man, and to have died at the age of 72, in an apoplectic stroke. Seven years previously he had a slight attack of hemiplegia, which was recovered from, except that the facial paralysis persisted. He had abdominal dropsy a year before his death. His mother was a woman of good constitution and died at the age of 73, of pleurisy. There were ten children, two by a first marriage and eight by the second—the patient is the youngest. His brothers and sisters seem to have been sound, of strong constitutions, except one brother now 48 years old, who, when 18 years of age, had an attack of typhoid fever. Ever since he has had tremulous movements of his hands. He can not write well; his condition has not changed in thirty years. One sister, now 38, with three children, after the birth of her last child—eight years ago—seems to have had puerperal mania. Her mind remains unsound, but she is not in an asylum.

Personal History.—The patient is a man of good intelligence and fair education. He has lived mostly in Tennessee, a few years in Florida, and has traveled abroad. He has always enjoyed excellent general health, usually weighing 140 pounds. He has led a very active and sometimes laborious life, being engaged in various mercantile pursuits, has had all the ordinary diseases of childhood, and a slight attack of influenza when 20 years old. This left no serious sequelæ.

Ten years ago, while working very hard in a wholesale drug-store, he suffered with lumbago, which confined him to bed for two weeks, and two years later he began to have pains in both legs and feet, with much restlessness of the latter at night. This condition lasted, with intermissions and in decreasing severity, up to two or three years ago.

He went to Europe in the summer of 1899, on business and for travel, remaining there until April, 1900. While in London, during February, drooping of the left eyelid occurred, and first attracted his attention while playing billiards—he was annoyed by the eyelashes coming in the field of vision. This drooping increased so that in two weeks complete ptosis of that lid existed, and he consulted an oculist. After three weeks partial recovery occurred and he has remained about the same ever since. He can not fix the date of the drooping in the right eye, but is sure that it was some months subsequent to the occurrence in the left. He had no diplopia at this time.

On April 20 he first observed that at times he saw double, and then visited another oculist in London. After examination he was advised to return home, as his case looked suspicious of serious trouble. He arrived in New York on May 10, and consulted an oculist for diplopia. He was wearing a shade over the left eye at that time, to avoid double vision. He reached this city on the way to Carthage on June 1, and walked from one train to another, in the station, carrying two heavy satchels. On taking hold of the hand-rail with his left hand, he found he had lost power in the arm and could not lift himself up by it. This was the first weakness he had experienced in any of the extremities. On June 10 he again noticed the weakness of the left arm when he tried to lift his baby. About June 15, while at home, he awoke from sleep in the middle of the night with very peculiar feelings—there was a wave of tingling passing through his body, great oppression over the chest and stomach, and he thought he was about to die. He had not eaten imprudently, but a dose of bicarbonate of soda gave him relief, and he was better before the doctor arrived; it was thought likely he had had indigestion. He says it was not at all like night-mare. Subsequently, at long intervals, he had slight recurrences of this.

Early in July he first found he had lost power in the right arm—discovering this by his inability to put this hand into his hip pocket. Two weeks later, in going into the village one-fourth of a mile from his home, he took a short-cut and had to cross a stile steps, so he reached out both hands and sought the fence to help him up, but his hold gave way and he fell backward to the ground. He recovered in a few minutes sufficiently to walk a few hundred yards to a doctor's office. He was then in a state of great prostration—pulse from 110 to 120 and weak. He had to be taken home in a carriage.

A few days after this he went to Red Boiling Springs and remained there two weeks. Just before leaving home, he thinks his lower limbs were weak. His stomach and digestion had become disordered and he felt badly and was losing flesh. He made no improvement at the Springs, and in a few days after returning home, started to Battle Creek Sanitarium in Michigan. By September 15 his muscular weakness had increased so much that he was unable to raise himself in bed or to dress himself unaided.

He remained at this institution from August 1 to October 1, receiving the usual treatment of massage, hot and cold packs, electricity, etc., the paretic state all the while increasing, although he was much relieved of his gastric disturbance.**

Through October, and up to November 21, he remained at home, during which time he thinks his condition grew no worse. He has never had the least trouble with his bladder. His urine has been repeatedly analyzed and nothing abnormal found. His bowels are usually good; no rectal paresis. He never had headaches, no febrile attacks and no pains except as above noted.

EXAMINATION OF PATIENT BY DRS. WOOD, J. R. AND W. E. BUIST; AT 8 P. M. NOVEMBER 23, AND 8 A. M. NOVEMBER 24.

He was fairly well nourished, color good, intelligence excellent, memory good. His forehead showed transverse wrinkles distinct. His expression was calm, the lower half of his face smooth and symmetrical, both at rest and in action. There was partial double ptosis. When his eyes were fixed on any object held above the eyes, the upper lids would gradually fall until the eyes were almost closed. Both eyes could be tightly closed.

Ophthalmoplegia (Partial).—The movements of both eyeballs were defective in all directions—weakest in the left external rectus. Convergence was fair. On turning the eyes to their limit in any direction, oscillatory movements soon appeared. The pupils were normal in size and shape, the reaction to light and accommodation good. The fundus was normal in both eyes. There was no facial paralysis, but the lips were weak and easily fatigued on suction. The tongue protruded in a straight line and with normal force, but soon began to quiver and in less than two minutes would fall back. The palate-reflex was normal, and moved well in both sides. The jaw-jerk was active, but on biting the temporals and masseters were weak and soon became fatigued; eating, swallowing and talking tired him in a few minutes. The neck muscles were sound and the trapezii quite active and strong. The pectorals and serrati were weakened, the latissimi good.

Arms.—The grip was very feeble in both hands. The dynamometer showed right 25 and left 27, and was better at the morning examination—32 and 35. Flexion of the elbow was active and strong if not resisted, but weak against resistance. The deltoids were flattened and small. There was no atrophy of the infra and supraspinati. He could raise his arms, flexed at the elbow, so that the fingers reached the top of the ears, and could maintain them, the right 25 seconds, the left 20, and then they would fall down. He could not put his hands in his hip pocket. His chest and shoulders were symmetrical—no fibrillary twitchings. Chest expansion: Expiration, 30½ inches; inspiration, 32½. After eight or ten deep inspirations, the power of expansion diminished to three-quarters less. The patient could write for a few minutes, but the handwriting then rapidly changed, becoming feeble, with irregular, illformed letters.

Lower Limbs.—These were weak generally, but with no atrophy. The thighs measured the same, and the calves were equal. In the recumbent posture he could put one leg over the other, and sitting could, with the greatest difficulty, throw one knee over the other—he could flex and extend the knees easily and equally. He could not raise either limb against resistance. When lying down he could not rise up unassisted, and when sitting could not rise to the erect posture without help. He could stand erect alone. Romberg's symptom was absent. Walking twice across the room his gait was good, his step being a little quicker than it should be, but after the third round his limbs got tired and he had to support himself or he would have fallen. The knee-jerks were very active when lying on his back and rather more than normal when sitting, but equal in both limbs. There was no foot clonus, and no extensor response of the big toes.

Myasthenic Reaction.—Tested at 8 a. m., November 24, the biceps responded well the first half minute, then grew weak, and responses ceased in about three minutes. Responses of the deltoids were very weak, and became exhausted in 2½ minutes. Both arms were alike.

Sensation.—There was no pain anywhere. Cutaneous sensibility was everywhere unimpaired to touch and pain—temperature test not used. The muscular sense was good. He could touch the point of his nose with a finger of either hand with his eyes shut, without tremor. No ataxic gait and no ataxic movement of arms existed. The organic reflexes were normal, and sexual power good. The symptoms of weakness and fatigability of the muscles were more pronounced in the evening examination than on the following morning.

The patient was under observation and treatment until December 11, and then went home. During this time the pulse and temperature remained normal, that is, between 76 and 88 and 98.6 to 99 respectively. His sleep was usually good and undisturbed. His appetite was fairly good and bowels regular. The urine was found normal in quantity and quality. His knee reflexes were frequently examined, almost always active and, when not so, hand reinforcement would develop them to fully normal. He wrote two short letters, the first he had written in some time; after the first page the hand-writing became bad. His digestion seemed easily disturbed and he was afraid to eat many articles of ordinary diet. On the evening of November 29, in less than an hour after dinner, he was seized with a tightness and oppression of the chest, some difficulty in swallowing and a sense of general prostration. His chest expansion was slight, even with effort, and his facial expression anxious. There was slight nausea when the head was raised a little, but no vomiting nor any epigastric pains or uneasiness. His voice was weak, and tired easily. This condition was recovered from in a few hours. He said he had felt such attacks before but lighter in degree. On another occasion he found slight difficulty in deglutition, the milk getting up in the posterior nares. The muscles were always a little stronger in the mornings, especially the levators of the eyelids. He was generally in a good humor, hopeful and patient. No twitchings nor tremors were ever present.

He improved in muscular power perceptibly while under our observation, the grip of the right hand 35, of the left 36, at the time he left. He did not improve any in flesh or general condition. He could walk across the room eight times without giving out. Dr. L. B. Graddy was kind enough to examine the eyes on the day he left, and found the pupils normal. The fundi in both globes were equally normal, vision normal, and the vocal cords acted normally.

Treatment.—Complete rest in bed was ordered. The thyroid gland was tried a few days but abandoned, because it seemed to produce headache. Cod-liver oil and phosphorus was given for a few days, but his stomach rather rebelled and he was placed on codein, 1/8 gr. every three or four hours, which he still takes tentatively.

COMMENT.

Making a summary of the symptoms presented in the above record, we have the following clinical picture: A young man, previously healthy, with no antecedent illness and no irregular habits, is taken with a gradually advancing loss of power in the muscles innervated by the third nerve; then marked improvement up to a certain point. After a few months he suddenly becomes aware of a partial loss of power in the left arm. This slowly increases, when unexpectedly his lower extremities get quickly tired, and one day in attempting to get up a stile steps he staggers and falls back. Both arms and both legs now rapidly lose power, so that on very slight exertion complete exhaustion of voluntary power takes place. Meanwhile no change in sensibility and no impairment of mind, no abnormal condition of reflexes, and no disturbance in the circulatory system have occurred. The paretic muscles, though diminished in size, do not show real atrophy, and respond to electric stimuli. This irregularly progressive march of paresis finally invades the muscles of mastication, deglutition and respiration. This, it seems, is essentially different from the clinical history and behavior of any other form of neurotic disorder.

If we compare the above symptom-complex with the features of those nervous affections which most resemble

* * A letter from Battle Creek, Dated Nov. 12 (received Dec. 10), states that "his case is unique, and called myasthenia gravis."

it, and with which it has been most frequently confounded, we can easily differentiate "myasthenia gravis" from each and all.

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LIMITATIONS OF THE LARYNGOLOGIST IN THE GENERAL TREATMENT OF NOSE AND THROAT DISEASES.

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The tendency observable in modern laryngologic literature, to ascribe to the general system a closer etiologic relation with the nose and throat, must have one important effect—to call for a more general treatment of the upper respiratory tract.

Before the local propaganda had practically absorbed the attention of specialists in our line, the general or systemic means comprised in great measure the plan of treatment of nose and throat diseases. And now that localism has had full sway, it is to be expected that the general treatment should come more into vogue. Perhaps, if it were merely a return to former conditions, there would not be much call for a paper on limitations in this regard. But we must not forget that during these years changes have taken place which have increased our knowledge tenfold and our range of instrumentation and manipulation a hundredfold; which have so added to the science of medicine that no man can encompass it; which have so multiplied the fields of work that division of labor is not alone a pleasure but a necessity. Knowledge is no longer cloistered in the minds of a few men; it is open and free to him who will but learn; and its adherents are no longer numbered by the few but by the many. Naturally, this encourages competition in the acquirement of knowledge and struggle for supremacy in the application of knowledge to the various fields of human activity.

The pace set by all these workers results in the development of the special lines and to such an extent that he who would keep up to the standard set by these pacemakers must confine himself, almost exclusively, to the domain of his own work. Hence, when there is a call to return to a general view of medicine, for the cure of certain nose and throat affections, the specialist who has been in great part a localist finds himself, if he be conscientious to patients, in a field in which he can not work, except to the detriment of his special duties, which can not receive the attention they require.

It is a consideration such as this that has led me to present here some points in the relation of the throat and nose to the general system, which seem, at least, to substantiate the proposition that has been made to the effect that the practitioner and not the specialist should conduct the general treatment. I know the argument is advanced that the specialist should be first a general practitioner, and then become a specialist, that he should never sacrifice his interest in general medicine for the detail of his specialty. And yet the progress in general medicine is so great that ten years make a tremendous difference and the specialist, after such a lapse of time from participation in the actual practice of general medicine, will find such a change that he will be in almost an unknown world. Then, he can barely keep up with the literature of his own line—not to speak of the tremendous amount that is to be included under the head of general medicine. Every month there are published about 300 articles devoted exclusively to the nose, throat and ear—the whole domain of medicine includes many thousands. Which is to be chosen, the relatively few or the impossible many? Another thing, the laryngologist's attention is, in the main, devoted to manipulation with instruments of examination and of therapeutics—can he be expected to be proficient in these and at the same time capable of outlining the plan of treatment which comprises conditions and circumstances remote from the nose and throat?

Because a paralyzed left vocal band is due to pressure upon the left recurrent, which in its turn depends upon a tubercular pleurisy or lymph node, is that any reason why the laryngologist should treat the tuberculosis? It seems to me that his function was completed when he discovered and localized the paralysis. Because chronic inflammations of the larynx and pharynx are often associated with bronchial and pulmonary conditions, and because the heart is in anatomic relation with the lungs and bronchi, is that any reason why the laryngologist should conduct the treatment of heart affections, or perchance kidney affections, which cause or result from cardiac diseases? I can understand how one who devotes his attention to the heart and lungs must be somewhat proficient in the diagnosis—not treatment—of nose and throat affections, but that the laryngologist should affect to include the lungs, heart and kidney is either presumptuous or evidence of a lack of full interest in his own line. It must be admitted, however, that circumstance sometimes throws a laryngologist into the necessity of including diseases of the lungs in his work, but few are equal to the task of properly filling both functions.

I say nothing of the justice which should be accorded the general practitioner who sends patients to laryngologists and to other specialists, for that matter, for his proper territory should not be encroached upon by the very men to whom he refers his cases.

Another phase of the question is to be found in the justice to patients, which we all should and do accord. Should we whose view is largely limited by the requirement of our special study and duties assume to meet the general indications with a skill equal to the general practitioner whose efforts are continually directed toward general conditions which we are considering? Is it not better for each to fulfil his own part of the medical and surgical management of the case—does not our own obligations to our patients demand this? We can, naturally, advise and consult with the general practitioner upon these matters, but to carry out these general indications is surely his particular function.

Relative to the bearing which general medicine and other specialties have upon laryngology, it will be interesting to consider the various conditions which may be associated with hemorrhage of the upper respiratory tract. According to Hagedorn, they include the following: Changes in the blood-vessels and blood itself, hemophilia, morbus maculosus Werlhofii, scorbutus, purpura hemorrhagica, phosphorus poisoning, anemia, leukemia, pseudoleukemia, diabetes mellitus, fatty degeneration of the blood-vessels, diphtheria, variola, ileotyphus, pyemic processes, gout, influenza, acute rheumatism, vicarious

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menstruation, nervous causes, lung diseases, heart diseases, interstitial nephritis, cirrhosis of the liver and pertussis. Is there a single condition enumerated here whose treatment a laryngologist would be justified in undertaking? Certainly there is as much reason to undertake general treatment of these complications and associations of epistaxis and hemorrhage from the pharynx as to prescribe general or systemic treatment for chronic rhinitis or pharyngitis.

In this connection, it might be well to mention that Kompe has discovered that epistaxis is a precursor of softening of the brain, which plainly indicates that in this instance the laryngologist might play the rôle of a diagnostician, but not that of a therapist.

COMPLICATIONS OF NOSE AND THROAT DISEASE.

When we investigate the various general and remote conditions which complicate nose and throat diseases, or which come into relation with them, we must be more than willing to admit that they can not fall within our therapeutic scope, unless they are relievable by local means or measures whose effect is local. Their number and distribution certainly offer a formidable argument in this regard. For instance, Friedrich groups them as follows:

Respiratory Diseases: All chronic lung diseases, asthma, emphysema, bronchitis, croupous pneumonia, chronic pleurisy, affections involving the apex of the lungs, edematous pleurisy, pleuritic exudates, chronic indurative processes of the lungs, tuberculosis, swelling of the intrathoracic lymph nodes, anthracosis, tumors of the mediastinum, diseases of the bronchial and peritracheolaryngeal lymph nodes, struma, thymus hypertrophy, abscess of the mediastinum.

Circulation: Heart weakness with lack of compensation, venostasis on account of the same, arteriosclerosis, mitral insufficiency and other valvular affections; aneurysm of the aorta, innominate, right subclavian and carotid, pericarditis, pericardiac exudate, thrombus, embolus, infarct and various affections of the heart and blood-vessels.

Digestion: Mouth conditions, dyspepsia, indigestion, cirrhosis of the liver, icterus, gall-stones, cholera Asiatica, cholera nostra, various stomach and intestinal affections.

Blood: Chlorosis, pernicious anemia, leukemia, pseudoleukemia, lymphosarcoma, hemophilia, purpura, scorbutus.

Chronic Constitutional Diseases: Rhachitis, acromegaly, diabetes mellitus, gout.

Acute Infectious Diseases: Measles, scarlatina, varicella, variola, typhoid, influenza, mumps, acute rheumatism, diphtheria, erysipelas, malaria.

Chronic Infectious Diseases: Tuberculosis, lupus, leprosy, glanders, foot and mouth diseases, anthrax, actinomycosis, rabies, trichinosis.

Kidney Diseases.

Skin Diseases: Eczema, herpes, pemphigus, impetigo, erythema, urticaria, lichen, miliaria.

Genital Diseases: Vicarious menstruation, masturbation, vasomotor reflex neuroses, puberty, gonorrhea, syphilis.

Eye Diseases.

Intoxications.

Nervous Diseases: Hemiplegia, progressive paralysis, cerebral softening, motor paralysis, tumors and abscess of the brain, meningitis, multiple sclerosis, bulbar paralysis, pseudobulbar paralysis, cerebral hemorrhage, cerebral syphilis and tuberculosis, tabes, syringomyelia, paralysis agitans, epilepsy, hysteria, chorea, enuresis nocturna, affections involving the cranial nerves, pachymeningitis, leptomeningitis, acute cerebrospinal meningitis.

It will be noted that though Friedrich devotes over 300 pages to the relations of the nose, throat and ear to these diseases, which comprise practically the whole range of medicine, he does not say one word on treatment, probably considering that this should in the main be left to general practitioners and specialists in other lines. This catalogue of diseases shows the utter futility of an effort on the part of the laryngologist to meet the general indications enumerated. To assert that some may be met is to confess that he is unequal to the task of conducting such treatment as successfully as one who makes a closer study of general conditions.

TREATMENT OF PHARYNGITIS.

It is very interesting to take up a single topic, such as chronic pharyngitis, and observe the general treatment advised by various laryngologists. The following are the general plans announced:

Ball interdicts alcohol and tobacco, urges suitable diet, sulphate of soda or Carlsbad salt, attention to general health, and mineral waters.

Block's treatment is prophylactic, dietetic, hygienic, climatic, hydriatic, medicinal and at mineral springs; mercury, iron, iodin and springs containing iron, arsenic, sulphur and iodin.

Bosworth treats gastric catarrh, and uses mineral waters, colocynth and podophyllum for constipation.

Bresgen tries mineral waters.

Coakley inquires into the diathesis, seeks to correct the causal conditions, relieves constipation and congestive diseases of the liver.

Downie prescribes general tonic treatment, dry bracing air, iron and quinin with bitter infusions, and saline aperients when necessary.

Fink treats sweaty feet with liquor antihydroicus of Brandau, corrects the disordered circulation and looks after the stomach and bowels.

French attempts to cure the impaired digestion, which is the underlying cause in the majority of cases.

Ingals attends to the bowels, with arsenious acid, saline diuretics, corrects dyspeptic symptoms, with colchicum.

Kyle gives careful attention to the general condition and to correction, as far as possible, of any underlying constitutional diathesis or organic lesion, and stimulation of glandular secretions of the alimentary and urinary tract. For this he gives effervescing phosphate of sodium, succinate of sodium, compound wine of iodin.

Lennox Browne resorts to saline purgatives, iron and vegetable tonics, and arsenical waters.

Morell Mackenzie prescribes confinement to the house, restricted diet, wet compress, mustard poultice, opiates, and the Turkish bath.

Mandel gives iron and iron salts, iodids, baths, and change of atmosphere.

Moure favors mineral springs, sulphur and arsenical waters.

Price-Brown treats chronic gastric disease, checks the liquor and tobacco habit, regulates the general system, attends to the alimentary canal and prescribes appropriate tonics.

Robinson treats the constitutional condition, by appropriate general medication and hygiene.

Rosenberg gives hygienic and dietetic treatment and baths.

Schech removes the anemia, scrofula, hemorrhoidal conditions, interdicts strong alcoholics, highly seasoned or too hot foods, smoking and snuff-taking; protects workers in dusty atmospheres by the use of respirators, enforces rest and limits use of the voice in professional speakers, prescribing baths, mineral waters, and hydropathic cures.

Schmidt stops the smoking and drinking, orders mineral waters, cold baths, and denies sugar to diabetics.

Seiler builds up the system, gives hygienic treatment, such tonics as quinin, iron and phosphorus, cautioning patients against the evil consequences of masturbation, venereal excesses and intemperance.

Solis-Cohen attends to the general health, urges avoidance of exposure, and maintenance of functions of the skin, bowels and other organs as normal as possible, giving as tonics, iron and quinin, phosphoric acid and compounds.

It is evident that in addition to the treatment at mineral springs, which can only be accorded to a minority of the sufferers from this disease, attention to the stomach and bowels, according to the references here given, constitutes by far the most important indication. Let us see what this signifies. Until a few years ago, such an indication would have been a simple one to meet in the light of the knowledge of the time. To-day it is different, for it involves a diagnosis between, and a thorough understanding of, acute gastritis, chronic gastritis, gastric ulcer, dilatation of the stomach, gastroptosis, superacidity and the various widely-distributed causes of constipation. To do this properly requires a thorough knowledge of the details of stomach-contents analysis, physiologic chemistry, physical diagnosis and the latest modern methods of gastro-intestinal treatment. This manifestly falls beyond the province of the laryngologist, and so, that which at first sight is the simplest general treatment associated with an affection of the nose and throat, calls for a general practitioner or one who has made the condition a matter of special study. So we may analyze the general indications in every nose and throat disease, until we are forced to the conclusion that our work should be limited to the local manifestations in the nose and throat alone.

In the few rare instances where general treatment results in immediate local change in the nose and throat, the laryngologist may appropriately conduct the general treatment, but under other circumstances it is his duty to refer the case to the general practitioner or to the specialist in whose domain the condition belongs.

Thus mercury and iodids in syphilis of the nose and throat, aconite, atropin, opium, coal-tar products, etc., in acute conditions, and salol, etc., and the salicylates in rheumatic conditions, so far as their effect is local, are subjects for study and use at the hands of the laryngologist.

Personally, I do not take the view that the general system has such an overwhelming influence upon the diseases of the nose and throat. I am more disposed to expect a local cause in the majority of instances. But when the system is found at fault, it is clearly not the function of the laryngologist to correct it, with the slight exceptions just indicated; and those who maintain that the general condition is the most important indication for treatment, must, in justice to their patients, refer them to the general practitioner for treatment.

LIMITATIONS OF THE LARYNGOLOGIST.

In conclusion, I venture the following as the limitations of the laryngologist in the general treatment of nose and throat diseases: 1. Acute conditions of the nose and throat, influenced by remedies which have an immediate local effect. 2. Rheumatic nose and throat conditions which exhibit a positive and early relief under appropriate treatment. 3. Syphilis of the nose and throat where general treatment may be best observed by watching its effect upon the local lesion, and where the local process is rapidly destructive. Even under these conditions, the patient's chances might be improved by assistance from one whose attention is less directed to localism.

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ABSOLUTE INCREASE OF MEASUREMENT FROM THE ANTERIOR SUPERIOR SPINE TO THE MALLEOLUS AS A SIGN OF HYSTERIC HIP DISEASE.*

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The differential diagnosis between tubercular and hysterical hip disease is sometimes easy but, on the other hand, sometimes exceedingly difficult, especially if the test examination under ether can not be resorted to; while the importance of a correct decision is always great, both from the medicolegal and the clinical standpoints.

Gilles de la Tourette, in an excellent review of the subject, gives a number of diagnostic signs—left side involved oftener than the right; pain, spontaneous or induced by pressure and motion, not only about the joints but at various points along the affected limb; relatively great development of cutaneous hyperesthesia; absence of nocturnal paroxysms; the presence of hysterical edema about the affected joint and limb; involvement of the knee muscles in the rigidity; coldness of the affected parts; finally, the presence of other well-marked hysterical signs—most of which are approved by my own experience. To this list the sign indicated by the title of this paper is at times a valuable addition.

The shortening of the measurement from the anterior superior spine of the ilium to the malleolus, due to the erosions and absorptions of tubercular hip disease, is familiar to every one. Less well known is the fact that in

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early stages of the disease this measurement is sometimes longer than the corresponding one of the opposite side, and the communication by Halsted,[1] published in 1885, in which the obviously correct explanation of this is clearly given is less often cited than it deserves.

Halsted's statement is that when this relative lengthening of the measurement is present on one side, it is mainly because the corresponding leg is adducted, and also because the opposite leg, with which comparison is made, is abducted. The latter factor is in fact the more important one, though both rest upon the same cause. It is, namely, perfectly evident, when one stops to think of the matter, that the center of motion within the head of the femur is ordinarily not in the direct line between the anterior superior spine of the ilium and the inner malleolus, but slightly inside of it toward the median line of the body. If, therefore, we measure from the anterior superior spine to any point below the neck of the thigh bone, we are measuring, as it were, the chord of a circle, and not the diameter, and no such chord can be as long as the diameter itself. If we strongly adduct the thigh, so that the three points in question lie in the course of one straight line, and then measure, we obtain, as it were, the diameter of the circle. It is also important to note that abduction shortens the measurement in question more rapidly than adduction lengthens it.

In the adduction of one limb and the abduction of the other with which its measurements compare, as met with in either tubercular or hysterical hip disease, provided they lead to tilting of the pelvis, these principles come eminently into play. The demonstration is easily made if one will place his foot on one end of a tape-measure and draw it taut to the anterior superior spine of the ilium, and will then note the changes in distance that are made as one sways the pelvis to the right or left, thus alternately adducting and abducting the limbs.

The value of this sign in differential diagnosis depends upon the fact that the lengthening of the measurements repeatedly alluded to rarely occurs in tubercular hip disease except in the early stages, when pain induces the muscular contraction which leads to tilting of the pelvis, yet when no erosion of the joint has taken place. In hysteria, on the other hand, the lengthening comes on with the contracture and does not pass away, however long the morbid conditions may last. Again, the difference between the two sides as regards this measurement is rarely, if ever, so great in true hip disease as it may be in its counterfeit, a fact which the case about to be reported will illustrate. Finally, the amount of lengthening or shortening is certain to be greater with persons whose pelves are of such a shape that the distance between the anteroposterior planes of the anterior superior spines and the acetabulum is relatively great. This is probably true of women as compared with men, but this point needs further investigation. I give a brief history of the case which called to our minds the importance of this diagnostic mark.

The patient was a woman about 30 years old, and of good health, up to the time of an accident which happened on July 31, 1893. On that date, while walking about a shoestore to make a purchase, she stepped backward through a trap-door, into a cellar about five feet in depth, but, the fall being partly broken by a short flight of steps, the actual blow was not very severe. She struck on the back, the left hip, and the back of the head, and, what was perhaps more important, she received a severe nervous shock, which was added to by the fact that she considered the storekeeper to blame.

After resting for a few minutes in a more or less dazed condition, she walked home, but almost immediately after entering the house she vomited, she said, two or three pints of a liquid which was colored with blood and was considered by her to be pure blood. The vomiting continued through the whole of that day, whenever any food was taken, but she kept about her house, nevertheless, until seen by her physician and advised to go to bed. For two days after this she was said to pass blood in the urine. The vomiting and nausea continued off and on for two weeks. She was extremely nervous, and suffered from attacks of faintness and pain along the vertebral column, increased by pressure. She had also palpitation and partial incontinence of urine for a number of weeks. Both legs became weak and would not bear her weight, though there was no paralysis. The pain in the neighborhood of the left hip was an early symptom, and would perhaps have been associated with the pain in the back as one of the general nervous symptoms, but for the fact that pain on active and passive motion, so severe as to make her scream out during the examination, suggested the idea of hip disease. Besides this pain on passive motion there was persistent dull ache, but there were no spasmodic outbreaks, even at night. The pelvis was tilted upward on the left side, to an extreme degree, and all the muscles controlling the motions of the hip-joint, and indeed those at the knee and ankle also, though to a less marked extent, were held rigid, so far as could be ascertained, day and night, without intermission. The diagnosis of hip disease was, moreover, strengthened by the discovery that the measurement from the anterior superior spine to the internal malleolus was greater by half an inch to an inch on the affected than on the unaffected side.

Treatment had been instituted in accordance with this view, and many months elapsed before she was permitted to put the foot to the ground. Meantime, the difference in the measurements aforesaid between the right and left side increased somewhat, so that it became actually more than an inch, while the whole limb became relatively cold and the muscles atrophic.

At an examination made by me in 1893, five months after the accident, and again nearly a year later, a well-marked hemianesthesia was found, associated with hyperesthesia over the hip-joint area, and the case was considered to be one of hysteria, pure and simple. Indeed, all her physicians had considered some of the signs and symptoms as of that nature.

At an examination made fifteen months after the injury, hemianesthesia of the left side, including the arm, leg, face and trunk, was still well marked. The vision of the left eye was not quite so good as that of the right, but there was no great impairment of the field for motion or color. She was still wearing the Taylor extension-splint and was suffering much from poor sleep, pain in the hip, knee and back, and from various hypochondriac and hysteroid symptoms. The general nutrition was poor. When she was examined, while lying flat on the table, the tilting of the pelvis toward the left side was so extreme and the abdominal muscles on the left side were so contracted that a depressed appearance was given to that half of the abdomen. The patient shrank from the slightest touch over the skin on or near the hip, pelvis, or back on the left side, and the slightest motion at the hip-joint was strongly resisted. The region of the left trochanter was

1. N. Y. Med. Jour., 1884, vol. 39.

excessively prominent, more than could be explained by any ordinary effusion or thickening. The surgeons considered that thickening was present, but I was inclined to believe that the condition was due to hysteric edema.

The left calf was found to be about three-eighths of an inch smaller than the right, and the left thigh was also smaller than the right, to about the same degree, but there was no practical difference between the glutei muscles. The entire left leg and arm, the left side of the trunk and face were slightly cooler than the right. The patient said that this was habitually the case, but that the left hand sometimes grew hotter than the right. I will note, in passing, that an alternating difference of this sort, the foot on the anesthetic side being cooler than its fellow while the hand on the same side is warmer, or vice versa, has been observed by me in quite a number of cases of hysteria. These signs, however, shift about from day to day or even hour to hour. The muscles about the knee and ankle were so rigid that it was difficult to bend the limb at those joints, as well as at the hip. No satisfactory reflexes could be obtained on either side, but the plantar reflex was much less pronounced on the left than on the right side. The knee-jerks were exaggerated, the left more so than the right.

The patient was carefully observed and repeatedly examined by the physicians in charge until the case came up in court, when her suit was lost on the ground of no liability. Her condition after this continued the same, except that she discarded the splint, finding she could get along about as well without it. Her general nutrition did not improve, and for a number of months she was troubled with a harassing cough and lost flesh and color to a marked degree. By my advice she entered the Massachusetts Hospital, and while there a salpingitis was found and treated, but without benefit to her general condition. After her return home means were found for sending her out of town, and she gradually improved, though without material change, either as regards the extreme tilting of the pelvis or the absolute lengthening above referred to.

Being greatly interested in the case, I kept track of the patient and, three years after the accident, at a time when the trial of her claim had long been an affair of the past, I induced her to come again to the hospital for examination under ether, by Dr. R. W. Lovett and myself.[2] All the conditions above described were present and unchanged before the etherization, but the relaxation was complete, the movement of the joint was free, the measurements became normal and the whole appearance and feel of the structure of the two hips became essentially alike on the two sides. As the anesthesia passed away, the contracture of the muscles, the hyperesthesia of the skin and the pain associated with passive motion rapidly returned. It could not be said that the rule laid down by Charcot, namely, that in hysterical hip disease the hyperesthesia of the skin returns before that excited by motion, could be substantiated.

Since that period the patient has gradually gained in all respects, but up to the time of my last accounts of her, she had not entirely recovered and was still lame.

The increased length of the measurement from the anterior superior spine of the pelvis to the internal malleolus has not, so far as I know, been recognized as a characteristic of hysterical hip disease, though a search through the literature of hysteria shows that it has not been wholly unnoticed. Charcot is said to have described a case of that sort, but so far as I could judge from the reference, he speaks of it in a way to lead one to think that he regarded the signs as important.

Since the case above recorded I have seen a similar one, though less marked, the details of which it is not necessary to mention, and my colleague, Dr. Lovett, to whom my sincere thanks are due for valuable aid in this case, has likewise observed one or two of apparently similar character.

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2. It is proper to say that the test by etherization had been proposed at an earlier stage, but was not carried out on account of the unwillingness of the patient and her friends to submit to it.

A CASE OF TRANSIENT MOTOR APHASIA, COMPLETE ANOMIA, NEARLY COMPLETE AGRAPHIA AND WORD BLINDNESS, OCCURRING IN A LEFT-HANDED MAN; WITH ESPECIAL REFERENCE TO THE EXISTENCE OF A NAMING CENTER.*

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The history of the patient is as follows: Alfred E., aged 42 years, a coal miner by occupation, had always enjoyed good health until the onset of the present illness, which occurred four weeks previous to his coming under observation. He denied venereal infection and the use of alcohol, and his family history was negative. At the time above mentioned—four weeks—while at work, he suddenly became dizzy and weak on the left side, but power was not completely lost. There was no loss of consciousness, but he found that he was unable to talk, although he knew what he wanted to say. He also noticed that he was unable to write anything excepting his name and address. In the course of a day or two he regained the power of speech, excepting that he could neither name objects nor people. He says that he knew the name but could not express it. The muscular weakness of the left side improved rapidly excepting the muscles of the face and tongue.

When examined, the patient appeared to be a healthy, well-nourished man, of considerable intelligence for his station in life. The heart, lungs and kidneys were normal, and there was no rigidity or increased tension of the blood-vessels. He was a left-handed man excepting for his writing, which had always been performed with the right hand. The angle of the mouth was drawn slightly to the right and the tongue was protruded to the left. Weakness of no other muscles could be discovered. The knee-jerks were both active and equally so, and upon the left side there was a wrist-jerk which could not be elicited upon the right. He complained of headache, but there were no other sensory disturbances. Examination of the eyes showed nothing abnormal. He understood everything that was said to him and could converse fluently until he was required to name either a person, place or object; this with the exception of his own name and address, he was unable to do. For instance, he was unable to give the name of his married sister, who was with him, but knew when it was pronounced correctly. There was inability to name paper, a penholder, an ink-well and a watch, but he could tell at once what they were used for, and whether or not they were named correctly by another,

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but he could not repeat the name after it had been pronounced. He also insisted that he knew the name but could not say it. He was equally unable to name the objects when felt or heard, as in case of the watch; or objects smelled or tasted. Both printed and written words were read very imperfectly, the latter more so than the former. Single letters could usually, but not always, be read, and in attempting to read he sometimes got a word by spelling it. When words not recognized were read to him, he was unable to tell whether it had been done correctly or not. It was noticed that the more common the word the more likelihood there was of its being recognized. Figures, he read correctly, but simple arithmetical calculations could not be well done; for instance, he knew how much twice two was, but could not tell how much five times two made.

With the exception of his name and address, spontaneous writing was impossible; in attempting it, after making one or two letters imperfectly he would give up in disgust. Writing from dictation could be done somewhat better, but still very imperfectly. For example, the sentence: "John Smith is no good," was given him. He wrote, with much effort: "John Smith is no"—the word "good" being attempted but unintelligible, and he was unable to proceed further. He could copy fairly well for a while, but would soon tire and be unable to proceed further, and he was unable to read what he had written. Figures could be made correctly.

Improvement gradually took place, the power of pronouncing names first becoming better. At the end of two months he wrote a letter home and was able to name, in some instances after some thought, all objects shown him, excepting a lead pencil.

To sum up the symptoms of this case, we have in a man who was left-handed for all acts excepting writing, which was performed with the right hand: 1. Loss of the power of naming, whether the object was seen, felt or heard, smelled or tasted. The name, however, he claimed to know and recognize, whether it was pronounced correctly or not, but he could not then repeat it. 2. Marked but not complete word blindness, with preservation of the power of recognizing and reading numerals. 3. With the exception of his name and address, inability to write spontaneously; better, but still very imperfect, power of writing from dictation, and inability to read the copy. 4. There was paresis of the muscles of the tongue and lower part of the face on the left side.

From the suddenness of the onset the lesion was evidently vascular in origin—either an embolus or hemorrhage. All of the symptoms excepting the inability to pronounce names can be explained by an incomplete involvement of the angular gyrus on the right side. A lesion limited to this locality does not, however, explain the peculiar form of inability to name objects exhibited by this patient. From the facts that the patient, by means of his internal language, could call the name into consciousness, that he could recognize whether it was pronounced correctly or not, but could not repeat it, we are justified in assuming that the disability was motor and not a sensory defect. It differs from the so-called optic aphasia of Freund in that there was loss of the power of naming, even after the stimulation of other senses than sight, and that there was ability to call up the name but inability to say it. There would seem, therefore, to have been no interruption of the pathways between either the primary or higher visual centers and the center for auditory word memories; it would seem likely also that a lesion destroying these tracts would also cause hemianopsia.

There has been some discussion of late as to the existence of a concept or naming center. After Broadbent, Mills has been the most earnest advocate of its existence. The case just reported would seem to add some proof to the correctness of the theory that such a center exists.

It will be remembered that the patient could not name objects after stimulation of either the senses of sight, touch, hearing, smelling or tasting, and also that the inability to pronounce the name was due to a forgetting of the muscular movements necessary to say the word, and not to loss of the power of calling the word into consciousness. These facts eliminate loss of function of the centers for preserving the sensory memories, viz., visual, tactile, auditory, olfactory and gustatory, as a cause. It is not likely that the center of motor speech memories in Broca's convolution was destroyed, as he could use all other words with facility. It does not seem improbable, then, that this disability was due to the destruction of either a tract or tracts leading from the region or regions where names are called into consciousness to the motor speech center. It is, therefore, necessary to assume that either the lesion cut a number of tracts leading respectively from the centers of visual, tactile, auditory, olfactory and gustatory memories to the motor center, or else that tracts from each of these centers converge to a common center where the memories of names are stored up to be called into consciousness by stimulation of one or all of the percipient centers, and that from this center a tract passes to the motor speech center, and that this tract was destroyed. While the occurrence of the former is conceivable, that of the latter seems more probable, especially so as a lesion to cut all of the tracts mentioned would have to be of considerable extent, and from the slight amount of shock present at the time of onset, this was probably not the case. The possibility of such a lesion occurring has been considered by others. Langdon[1] has reported the case of a man who had lost the power of naming objects seen and felt, but who could name them when any of the other senses were excited. He knew what the object was used for and whether the name was pronounced correctly or not by another, but he could not repeat it. In addition, he had word and letter blindness, agraphia due to muscular disability, as he could write with the left hand, right homonymous hemianopsia, right hemiplegia and anesthesia of the right hand and forearm. Langdon believed that the lesion involved the posterior limb of the left internal capsule and extended outward into the centrum ovale, but did not involve the cortex. He believed that inability to name objects, either seen or felt, was due to a cutting of the tracts leading from the centers of visual and tactile memories to Broca's convolution. He afterward says that it is also possible that the symptoms might be produced by a cutting of fibers going from these centers to the naming center and regards the existence of such a center as possible but not proven.

Bramwell,[2] in discussing a case of total inability to spontaneously name objects and persons, with, however, ability to repeat names when heard, associated with slight word blindness and agraphia, says that this inability, viz., loss of the power of naming, may be due to destruction of the "naming" center, which he assumes is part of the superior temporal convolution; destruction of the nerve fibers which pass from the "naming" center to the motor vocal speech center; and destruction of the motor vocal speech center by which these impulses are emitted. To these Mills very properly adds "de-

struction of the sensory percept centers and tracts leading from these centers to the naming or concept center."

If we assume that the belief that a naming center exists offers the best explanation of the occurrence of the peculiar form of anomia presented by this patient, the question arises: Where is this center? This has not yet been answered satisfactorily, and this case does not offer us much help other than that from a consideration of the other symptoms presented, it seems probable that it is somewhere in the region of the center for auditory memories, where it has been placed by others. Mills[3] has located it in the third temporal convolution, but his case, reported as evidence of this, is not conclusive as there was destruction of other neighboring portions of the brain, and other forms of aphasia —word blindness, agraphia, etc.—were present. Hammond[4] has recently reported a case due to traumatism, in which the patient had no other symptom excepting the loss of ability to name, and knew the proper uses of the objects presented, but could not pronounce the name after he had heard it. When operated on, a clot was found covering the entire superior temporal convolution on the left side, and at the junction of the posterior with the middle third of the gyrus there was a hole into which a probe could be introduced to a depth of about an inch and a half, at a right angle to the surface of the gyrus. Removal of the clot was followed by recovery. Hammond believes that there is a certain region of the cortex in which the memories of names are stored; he thinks that it is probably a part of the center for auditory memories which has this special and isolated function. Bramwell,[5] in his discussion of the case, before mentioned, expresses the same view. That a so-called center may be subdivided into parts possessing different functions would seem probable from the observations of Hinshelwood[6] and others who have reported cases in which there was letter but not word blindness, the converse of what should take place if the faculty remaining depended on first-learned and consequently, as it were, more deeply-rooted impressions.

It will be remembered that in Hammond's case, before mentioned, there was no word deafness, and yet there was a lesion involving part of the left superior temporal convolution. At this point it may be well to again call attention to the fact that in the case just reported, there was but slight letter blindness, and that the power of reading and writing numerals was preserved.

While recognizing the uncertainty of the correctness of an opinion based alone upon clinical symptoms and theorizing, it seems to the writer that the most probable explanation of the inability to name objects presented by this case is: that there is a naming center, probably somewhere in the temporal lobe, possibly part of the superior temporal gyrus, and that a tract leading from this center to the center for the preservation of the motor memories of speech was damaged. Such a tract would likely run through the insula and thus would be in a location easily reached by a lesion that had, judging from the word blindness and motor paralysis present, involved the angular gyrus and extended subcortically in a direction to impair the function of the fibers running from the centers for the lower part of the face and tongue to the internal capsule.

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1. Langdon: Phila. Med. Jour., vol. iii, p. 504.
2. Bramwell: Brain, 1898, p. 343.
3. Mills: Jour. of Nerv. and Mental Dis., vol. 23, p. 1.
4. Hammond: Ibid., vol. 26, p. 754.
5. Loc. cit.
6. Hinshelwood: Letter, Word and Mind Blindness.

THE PHARMACOLOGY OF THE NITRO-SUGARS.*

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The nitro-sugars are in reality nitrate-esters, and are closely allied to nitroglycerin and other members of this class. They were first prepared, along with other organic nitrates, by Schonbein[1] (1845), then by Sobrero[2] (1847) and Flores Demonte and Minard[3] (1847). The whole class of bodies obtained by these observers was made by simple nitration, and this led to the name "nitro" being given to them. Subsequently another class of substances possessing entirely different physical and chemical properties was obtained, and, on reduction, yielded amido compounds. To these the name of nitro-compounds has been restricted. It was shown later that nitroglycerin did not yield an amido compound and, therefore, it could not be a true nitro body. It is in fact a nitrate.

The differences may be expressed, taking the derivatives of etham as examples, thus:

$C_2H_5—NO_2$	$C_2H_5—ONO$	$C_2H_5—ONO_2$
nitro-etham	ethyl nitrite	ethyl nitrate

As nitro compounds yield amido compounds on reduction—$C_2H_5NO_2$ yielding $C_2H_5NH_2$—it is evident that their nitrogen is directly connected to the alkyl radical, whereas nitrites, which are isomeric with them, must have their nitrogen linked to the alkyl radical through the intermediation of an oxygen atom, as there is no other possibility. Nitrates which are built up in the same way as nitrites must also have their nitrogen united to the alkyl by an oxygen atom. Recently the formula R-OONO has been suggested, but into this question it is unnecessary to enter. It may perhaps be well to restate that the nitro-sugars belong to this nitrate class.

Pharmacologically the interest which surrounds the nitrites and many organic nitrates is their peculiar affinity for unstriped muscular fiber, especially that of the blood-vessels. Injected into the circulation, they lower blood-pressure; perfused through the vessels of isolated organs, they dilate them; and administered to man, they lower the tension of the pulse—effects due to a paralyzing influence on the unstriped muscle of the blood-vessel wall.

All volatile or soluble nitrites, inorganic or organic, exert this action, but not all nitrates. Inorganic nitrates and organic nitrates corresponding to them, e. g., urea nitrate, have no influence. The organic nitrates which possess this effect are those in which the nitrate group has replaced an alcoholic hydroxyl. And all of them, with a few doubtful exceptions, belong to the aliphatic group. Ethyl nitrate, which may be regarded as ordinary alcohol with the OH replaced by NO_3; glycerol trinitrate (nitroglycerin), in which the 3(OH) of glycerin have given place to 3(NO_3), and erythrol tetranitrate, in which the 4(OH) of erythrol (a tetrahydric alcohol) have been replaced by 4(NO_3) are examples in point.

The action of these three substances, although similar in kind, is of very different degree. Nitroglycerin in minute amounts possesses a powerful but comparatively transient action; erythrol tetranitrate in much

* Read by title in the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1. Philos. Mag., xxxi, p. 7.
2. Comptes Rendus, xxiv, p. 247.
3. Ibid., p. 390.

larger amounts, a more gentle and prolonged effect. The difference in action is due in the main to a difference in solubility—erythrol tetranitrate is a crystalline solid and much less soluble in water than nitroglycerin; mannitol hexanitrate, which is still less soluble, exerts a correspondingly weaker effect.[4]

The nitro-sugars possess an action similar to these solid organic nitrates. They too are solid, but the three investigated—glucose nitrate [$C_5H_6(NO_3)_5CHO$], levulose nitrate [$C_5H_6(NO_3)_5CO$], and saccharose nitrate [$C_{12}H_{14}O_3(NO_3)_8$]—are non-crystalline. At ordinary temperatures they are of a pasty consistency; at low temperatures they are brittle solids. Their solubility in water is very small; they gradually decompose in air, and like all bodies of this class, they are explosive.

Their pharmacologic action corresponds to their chemical constitution and solubility in water. A saturated solution in 40 per cent. alcohol injected into the circulation causes an immediate and somewhat prolonged fall of blood-pressure, and when injected through a catheter into the stomach a similar, but delayed, slighter and more prolonged fall is obtained. Perfused through the vessels of an isolated kidney, they all cause distinct dilatation, apparently of almost equal degree. They also exert a similar action on the pulse of man, but the effect is not great. The following figure shows that produced by 0.1 gram of glucose pentanitrate:

On urinary secretion the effect is slight. In the few experiments made the variations seemed to follow those of the blood-pressure.

These bodies, in fact, act in every way like the other solid organic nitrates of this class. Like them, they are readily reduced on boiling with dilute alkalies, and the explanation of their action, whatever it may be, is the same. They are, however, much less stable and much less active than erythrol tetranitrate, and on this account it is doubtful if they will find a place in therapeutics. Strange to say, they possess a very bitter taste.

4. Bradbury: The Lancet, 1895, ii, 1205.

THE CLASSICAL CESAREAN VERSUS PORRO CESAREAN.*

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As the present year completes the nineteenth century and we are about to be ushered into another with all its responsibilities, it is natural for those of us who are interested in the history of midwifery to look over the past and also think of the possibilities of the future.

The remarkable advance which has been made, particularly in the latter half of this century, has revolutionized our science, resurrecting operations which were in the writer's student days spoken of only in condemnation. We refer to the classical paper on the "Contagiousnss of Puerperal Fever," by Oliver Wendell Holmes, in 1843; next, the work of Semmelweiss, of Vienna, in 1846, and later that of Pasteur in bacteriology, and its application to surgery by Lister. The works of these illustrious men have established forever the fact that the so-called childbed fever is an infection.

The antiseptic era has revolutionized obstetric surgery. It has made the physician all the more appreciate the fact that the problem before him for solution is a grave one and that at any moment in the progress of labor he may find himself facing an operation which must be performed, not only intelligently, but immediately.

This century has given us the child-saving operations: axis-traction for the forceps, the modern symphysiotomy, and the modern Cesarean section.

The century is closing with our science placed on a higher plane than ever before in its history. The obstetrics of to-day conserves the child's interests more than it ever did in the past. It makes us all the more mindful of the fact that we have two lives at stake and that we have no right to sacrifice one to save the other.

The twentieth century still has much to accomplish. Let us hope that with the advance of civilization the midwife will soon be a thing of the past, or else remedy the evil by compelling her to attend a full course in medical training, for none other than the physician has a right to assume the responsibility of an obstetric case.

My object in this paper is to defend to the best of my ability the classical Cesarean section as the operation of choice whenever it is essential to deliver by abdominal section; also to express my views in answer to the question: Does the life of the child alone indicate the Cesarean section? My conclusions are based on an experience gleaned from my private work and the work of two teaching maternities—the Philadelphia Lying-in-Charity for twelve years, 8000 cases, and the Medico-Chirurgical College Maternity for six years, 1500 cases; also the study of the published results of others.

In these two maternities thirteen successful Cesarean sections have been performed. Of this number six were by the writer, seven by my colleagues. Twelve of these cases were the classical Cesarean by choice; one was a Porro by necessity.

The Cesarean section is so frequently performed now and—in the hands of the experienced—with such a low mortality that the day, we believe, is not far distant, if it does not already exist, when, for the child's interest it will be elected in some cases over high forceps, version, induction of premature labor, and symphysiotomy. If the mortality is as low as we claim, the operation will be more generally resorted to and we may expect in the future a new chapter added to obstetrics.

If we follow closely the recent literature on the subject we believe that the above statement as to mortality can be substantiated. Each month is adding to the accumulating evidence.

A recent paper by Reynolds[1] on "The Conditions which Govern Success in the Sanger Cesarean Section," embodies my views so precisely that I will take the liberty to draw from his text. He reports fourteen successful cases and makes the following two propositions:

1. "That when the mother's vitality has been seriously lowered by either septic infection, prolonged labor, or complicating disease, the mortality of the Cesarean section is so high that it is an unjustifiable operation, and in such cases symphysiotomy should be done when it is applicable or, if it is not, craniotomy to the living child should be unhesitatingly preferred to the section, in the interests of the mother."[2]

2. "That when the mother is in good condition, that is, when she is generally sound, uninfected, and not

* Read by title before the Section on Obstetrics and Diseases of Women, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1. Obstetrics, January, 1900.

2. Always excepting cases in which the hopeless condition of the mother leaves the child's interests only for consideration.

exhausted by long labor or by prolonged efforts of delivery by the forceps, the Cesarean section is so safe an operation that it may be used unhesitatingly in cases at term, whenever an intrapelvic deformity would be fatal to the child, and may often be preferred even to the induction of premature labor, on account of its superiority in the saving of fetal life."

He analyzes the two largest lists of Cesarean sections recently published, that of Everke's 35, and Leopold's 100.

Excluding the cases of hysterectomy and those infected, or else exhausted by long labor, that were operated on, he finds 74 cases come under his second proposition.

To this number he adds his 14 cases, making 88. I will take the liberty to make the same analysis of the 13 cases herein mentioned and will remove one case, a hysterectomy, leaving 12 cases operated on in good condition, by hysterotomy. This makes a grand total of 100 cases. In this series there were but two deaths; both cases were operated on many years ago when our technique was not as good as it is now.

"The most favorable showing for the neglected or complicated cases, that of Leopold, gives almost one death in every four." It would seem from these statistics that the Cesarean section, if anticipated and not performed as a *dernier ressort*, is accompanied with so low a mortality that the life of the infant would be a sufficient indication.

Accepting this proposition it becomes our duty to be prepared to operate by abdominal section in all cases giving the history of one or more labors resulting disastrously to the infant.

In pelvic deformity the patient in many cases should be given the test of the first stage of labor and if the head is fixed at the inlet the forceps may be applied and judicious traction made; failing in this, abdominal section should be resorted to.

For eclampsia developing at or near term when for certain reasons it does not seem wise to resort to manual dilatation of the cervix, abdominal section will rapidly empty the uterus and enable us to bring about free blood-letting, which is often beneficial. Olshausen advises Cesarean section in severe cases of eclampsia occurring before the onset of labor and with undilated or unyielding soft parts.

Hillman reports a case of eclampsia in which he was forced to perform Cesarean section. The woman, a primipara, 23 years old, came under observation after she had had six convulsions. She was cyanotic and comatose; pulmonary edema, no labor pains, os completely closed. The operation was performed to save the mother's life. It could not be decided whether the child was alive or dead. After the uterus was emptied there were no further convulsions and immediate improvement was followed by recovery. The child was still-born.

For placenta prævia, particularly the central variety, when the patient has not been depressed by excessive hemorrhage, abdominal section will conserve the child's interests, and the patient will escape the hemorrhage subsequent on any operative interference per vias naturales.

For prolapse of the cord complicating the vertex, especially in cases where the cord can not be reposited and podalic version is entertained, here, in some cases, section may suggest itself.

There exists a difference of opinion among American Cesareanists as to which is the better method of operation, the Sanger or the Porro. The writer believes that the same conservatism which has cared for the child must be applied to the mother, and that a mutilating operation should be only one of necessity.

The celio-hysterotomy has many advantages over celio-hysterectomy. We can not agree with those who believe that a woman should not be exposed to the danger of a second Cesarean.

Celio-hysterotomy has a lower mortality, can be performed more readily, and above all it is the operation which conserves the mother's interests and by so doing broadens the field for the Cesarean section. On the other hand, celio-hysterectomy is mutilating, has a higher mortality and should only be performed when the patient is infected or when some tumor of the uterus makes it necessary. Celio-hysterectomy should not be performed simply to prevent future pregnancy, when ligation of the Fallopian tubes—which is less mutilating—will accomplish the same purpose.

In reviewing my six cases we find the following:

CASE 1.—Flat rachitic pelvis; also extensive fibroids of the uterus. Patients two days in labor, infected. Hysterectomy was necessary.

CASE 2.—Scolio-rachitic pelvis. A second Cesarean, an elective operation. Hysterotomy performed.

CASE 3.—Coxalgic pelvis; a II-pari; first labor ended in craniotomy; operated on during labor. Hysterotomy.

CASE 4.—Generally contracted pelvis. Patient has had six dead children. Elected date. Hysterotomy.

I wish to place on record my fifth and sixth cases, operated on in February and March of this year.

CASE 5.—A third Cesarean for scolio-rachitic pelvis. Mrs. C.; married; aged 34 years, was admitted to the Medico-Chirurgical College Maternity Feb. 13, 1900. In September, 1892, she was delivered by the elective Cesarean[3] section in Kensington Hospital for Women, Philadelphia. Dr. Charles P. Noble operated, the writer assisting.

Five years after this, in 1897, she was admitted to the Philadelphia Lying-in-Charity in her second pregnancy, and well advanced in the last month. With the history of this artificial delivery and the patient again in the last week of gestation a second Cesarean seemed indicated. The staff of the hospital agreed with me in this opinion. Examination of the patient proved the fetus to be of good size, presenting by its pelvic pole. The following measurements were made: intraspinous 27 cm., intracristal 28 cm., external conjugate 17 cm., diagonal conjugate 8.5 cm., true conjugate 7 cm.

A second elective operation was performed Aug. 12, 1897. A free incision was made through the abdominal wall to the side of the old linear scar. Several omental adhesions were now loosened, then it was found that the uterus and abdominal wall were firmly united at the lower angle of the old incision. The uterus showed no evidence of the result of the first operation. The silk sutures used could not be found. Although this strong attachment between uterus and abdominal wall interfered with the compression of the organ it did not seem wise to make the dissection.

A clean incision was now made parallel with the long axis of the uterus just sufficiently large to permit the extraction of its contents. The fetus, presenting by the breech, was delivered head first through the incision. The uterine wound was closed with interrupted silk sutures just escaping the mucosa. For the abdominal wound silkworm gut was used.

The third Cesarean was performed in February last, at the Medico-Chirurgical College Maternity. In this

3. Annals of Gynecology and Pediatrics, January, 1893.

operation the patient had the test of a thirteen-hour labor without progress.

The incision was this time made over the old scar. Because of the firm union between the uterus and abdominal wall at the lower angle of incision a transverse fundal incision in the uterus was made. The child, a female weighing 7½ lbs., was with ease removed, and the uterus nicely contracted.

The puerperium was uneventful. Mother and child left the hospital in four weeks. Both were in good condition.

CASE 6.—An obliquely contracted pelvis. Mrs. B., a multipara, aged 37 years, was admitted to the Philadelphia Lying-in-Charity, Feb. 28, 1900. The history of her previous labors is briefly as follows:

The first labor was long (52 hours) and finally terminated by the use of forceps. The child was dead.

The second labor, also long, resulted in craniotomy. As a result of these two instrumental deliveries the soft parts were badly torn, demanding two years ago the removal of the left ovary, trachelorrhaphy and a ventrofixation of the uterus. The patient comes to us a third time pregnant, near term. Her previous history is explained in an examination of the pelvis. It is contracted and the left oblique measurement is much encroached upon.

Cesarean section was performed after the test of a fourteen-hours labor. An interesting point in the operation was the effect that pregnancy had had on the fixation of the uterus. Fortunately the uterus was not firmly attached, else we might have had another cause for obstruction.

The growing uterus had left its point of attachment and a cord-like band six inches in length had formed, extending from the fundus over the anterior wall of the uterus to the point of attachment. A longitudinal incision was made in the uterus and the child easily removed. The infant was a male weighing 9¼ lbs. Mother and infant left the hospital in one month in good condition.

In conclusion, I would say:

1. That the life of the infant alone, under certain conditions, justifies the Cesarean section.

2. That the classical Cesarean has as low a mortality as an easy ovariotomy. Is not the life of the child then as good a reason for performing a simple abdominal section as are the vague symptoms for which operations are daily done?

3. That the classical Cesarean is less mutilating than the Porro Cesarean, and, with the patient in good condition, is therefore the operation of choice.

4. That the Porro Cesarean has about the same mortality as has hysterectomy for fibroids. That it should be performed when the patient demands it, or when infection or a neoplasm of the uterus makes it necessary.

5. That it is the duty of the practitioner in attendance on a multipara with the history of one or more dead children, to be prepared to perform the Cesarean section. If he does not possess the necessary surgical training then he should call to his assistance the obstetric surgeon.

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Lumbar Puncture in Miliary Tuberculosis.—Dr. William Osler recently showed, at his clinic, specimens from a patient who had died of acute miliary tuberculosis, and in whom the diagnosis had been made by lumbar puncture, the fluid exudate obtained showing an enormous number of tubercle bacilli. The disease is almost invariably mistaken for typhoid fever.

OCEAN CLIMATES: THEIR EFFECTS AND THE CASES THEY BENEFIT.*

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We are all familiar with land climates, for obvious reasons, but a study of ocean climates is desirable, because a sea voyage is often beneficial when a change of land climate is of no avail. And why this is true is readily comprehended when the differences in the climates are observed.

1. The climate of the sea is more equable on account of the temperature being varied by ocean currents instead of winds, as is the case on land. That this is true is proven by the fact that the hottest and coldest months on land are August and February, respectively, because the winds are scorching and freezing during those months, while the hottest and coldest on the sea are September and March, because the southern cauldrons are at their highest and lowest temperatures during those periods.

2. The sea air is warmer. While this statement applies to the parts of the sea which are the ordinary paths of travel, yet as a statement it is true in general, as Arctic explorers have said it was warmer on the sea than on land—or ice. The warmer air is more sedative, and tends to allay nervous irritability of tissue and body.

3. The air of the sea is more nearly aseptic, is free from dust, and contains more ozone than land air, except in the highest altitudes. And it is almost continually in motion.

4. The sea air contains more moisture than land air, and this moisture is laden with the volatile elements of sea water. The dew point is lower than on land, and the sensible temperature is also somewhat lower.

Besides these points of difference, it is interesting to note that the sea currents flow so that the warmest currents hug the shores of the coldest side of the continent, as the so-called gulf stream follows our Atlantic coast, while the Japan stream veers away from our warm western shores. The rising and lowering of the temperature is slower than on land, for the isotherms travel only at the rate of twenty-two miles a day, while the cold or hot waves on land travel with the velocity of the wind.

Thus we see that the sea affords conditions that favor slow travel. And in the days of the sailing vessel it was quite the proper thing for the invalid to take a sea voyage, where he could enjoy pure air, sunshine and the breezes.

What are the effects of a sea voyage? The equability of the climate permits, and the desires of the traveler demand, the spending of the most of his time in the open air, and the pure air is stirred in motion by the continual sea breeze and fans the invalid, and the tonic influence of the air creates appetite, and the enforced rest revives the exhausted body. Quiet of body and mind, freedom from the worry of business and domestic cares assist mother sea in restoring the tired invalid to health. Sea air has a sedative effect on the nervous system, increases metabolism, weight, appetite, and inclination to sleep, and so, to those with whom it agrees, it is a sedative tonic.

From a knowledge of these effects we can readily perceive the class of cases which sea air will benefit. In addition to the general effects enumerated, the air has, also, a sedative effect on the respiratory passages. Therefore

* Read at a meeting of the Chicago Laryngological and Climatological Association, Nov. 15, 1900.

a sea voyage should benefit a large number of cases of diseases of the respiratory tract, and we find that it is true that it is, in the majority of cases, a specific for hay-fever, whooping-cough, purulent and chronic bronchitis, and of benefit in incipient tuberculosis and tuberculosis where cavities or empyema exist. Walshe gave it as his opinion that a sea voyage, especially in the case of young adult males, will occasionally work more effectual change in the phthisical organism than any other single influence or any combination of influences with which he was acquainted. Formerly sea voyages took the place of the high altitude treatment of consumption. The English recommended the trip to Australia or New Zealand because it afforded the longest spell of marine influence. Williams gives statistics of 65 phthisical patients who used sea voyages: 41 were in the first stage, 17 had the right lung affected, 12 the left, and 12 had both lungs affected. In this group 5 had the disease arrested, 19 decreased, 4 remained stationary, 4 advanced, and 9 extended; 58 per cent. were improved, 10 per cent. remained stationary and 32 per cent. were worse; 24 were in the second and third stages, 5 had the right lung in the second or third stage, 5 had this lung in the third stage and the left in the first; 7 had the left in the second or third stage and 7 had the left lung in the second or third stage and the right in the first. Of this group, the disease was arrested in 5 cases, decreased in 31, remained stationary in 7, advanced in 9, advanced and extended in 3, and extended in 10; 55 per cent. were improved, 11 per cent. remained stationary, and 34 per cent. were worse.

Altogether improvement was noted in 77 per cent., and 22 per cent. were worse. In the cases where softening or excavation was present, 43.75 per cent. were improved. Williams remarks: "The general improvement consisted of gain of appetite, color and strength, and above all, of weight; sea voyages surpassing all the other climatic groups in this particular. Twenty-five of these patients were weighed before and after the voyages and the result was 17 had gained, of whom 9 had gained more than a stone, and the rest from 5 to 12 pounds. In 3 cases the fact of gain only was recorded. In 2 patients the weight remained stationary, and 6 lost weight. The large gain of weight is to be explained by the improvement of the appetite, the regularity of the meals, the plentiful supply of food at them, and the lack of opportunities for exercise."

Williams believes the forms of phthisis that are benefited are: 1, the scrofulous or strumous form; 2, the hemorrhagic type marked by limited consolidations and large recurrent hemoptyses, and lastly the chronic unilateral cavity cases, without great local irritation. He believes the sea air promotes the fibrotic process, and when there is a septic discharge it has also a healing influence, and the results in cases of empyema are sometimes marvelous. Therefore, he recommends sea voyages in chronic pleurisy and empyema, chronic bronchitis, various forms of scrofulous disease, hemorrhagic phthisis, unilateral tubercular cavities and neuroses, the result of overwork or insomnia.

But the day of trips on the sea in sailing vessels is apparently over, for the present generation is not content with the slow methods of the past, but wishes to regain health in a hurry. And they prefer to go to some altitude resort where they can easily return to their homes on the first appearance of home sickness, and keep in touch with their world of business. An ideal trip for such patients is a combination of sea travel and mountain climbing, such as is found in a trip to Norway, for example. A trip across the Atlantic prepares the invalid for a continuance of the journey by steamer along the coast, and among the fjords of Norway. The monotony of the sea voyage is interrupted by short journeys across the land, over the mountains in wagons or carts in a bracing and pure climate, where the best of food can be obtained and the novelty of traveling through a new country adds pleasure to a trip which otherwise might become irksome. The wayside trips are never far enough from the sea to be removed from the effect of the sea air, and the confinement of the vessel is removed. The greatest objection to such journeys is the expense, yet it does not amount to so much more than the expense of traveling on land as to be an insurmountable objection.

Asthma is frequently benefited by a sea voyage, notwithstanding the humidity of the sea air. But in this disease the same rule holds good as in prescribing a change of air on land: what is beneficial to one patient may be a source of torture to another; so no rule of advice can be laid down as infallible.

Scrofulous affections, other than pulmonary, are frequently cured by prolonged sea voyages, and I know of no better cure for the malarial dyscrasia, for the patient is entirely removed from all the conditions which tend to prolong this condition.

Debility as evidenced by chlorosis, anemia, malaise, loss of flesh and strength, insomnia, nervous irritability and similar symptoms is often removed by a sea voyage.

Chorea is frequently benefited, as well as some cases of rheumatism, contrary to the ordinary rule that rheumatics should not be in a damp climate. But the exposure which patients often are subjected to in the way of humidity at sea is often without bad results, like the patients I have sent to the mountains with asthma, who could wade through slush and snow and get their feet wet without any sign of asthma.

As already intimated, the class of cases which are benefited in highest degree are the overworked, melancholic, the brain-goaded sufferers, the women who are harassed by domestic cares, or society dissipations, the children who are nervous and weakly, and, in short, the army of neurasthenics. In this class of cases it is a question whether the improvement almost invariably following an ocean voyage is due so much to the change of climate as to the change of scene and entire change of life.

I have purposely omitted the disadvantages connected with a sea voyage, for the reason that the climatologist can not refer his patient to any spot on earth where there are not disadvantages, and if we are to scientifically study the effects of various climates, we must know their physiologic effects, and then compare the value of different varieties of climate by admitting that, aside from variations in climatic conditions, all the others are equal. Admitting, therefore, that all other conditions are equal, I am inclined to believe that the advantages of a sea voyage for a large number of our patients who seek change are often overlooked, and I believe the modern comforts of an ocean voyage offer inducements to patients which should be accepted in many instances, and my colleagues will probably agree with me when I say that no travel causes the tired-out professional man to renew his strength quite so quickly as ocean travel, barring the individuals who have idiosyncrasies against this form of treatment on account of incoercible seasickness.

297 Ashland Boulevard.

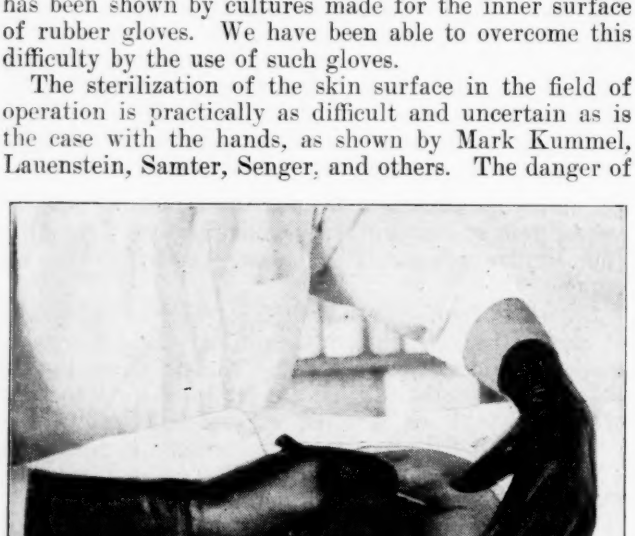
ADHESIVE RUBBER DAM FOR THE PREVENTION OF POSSIBLE INFECTION AT THE SITE OF OPERATION.

J. B. MURPHY, M.D.
CHICAGO.

Infection of wounds during operation may always be traced to contact with materials, and is probably rarely if ever due to contamination from the atmosphere (Dr. P. L. Friedrich, *Arch. für Klin. Chir.*, B. 59.). The common sources of infection of operation wounds are as follows: 1. Instruments. 2. Sponges and dressings. 3. The hands of the operator or assistants. 4. The skin of the patient. 5. Towels, sheets, etc., used about the wound.

The exhaustive researches of Fürbinger, Ahlfeld, Koch and others emphasize the difficulty of rendering the hands aseptic, for after a short period of exposure they again become septic from their own secretions, as has been shown by cultures made for the inner surface of rubber gloves. We have been able to overcome this difficulty by the use of such gloves.

The sterilization of the skin surface in the field of operation is practically as difficult and uncertain as is the case with the hands, as shown by Mark Kummel, Lauenstein, Samter, Senger, and others. The danger of



infection from this surface is always present a short time after it had been prepared, because of the secretions from the sweat and sebaceous glands, which the sterilizing solutions have been unable to reach. Samter secured sterility in 20 per cent. of his cultures after thorough disinfection; Lauenstein, 44 per cent.; after preparation by Fürbinger's method, not a single case was free from germs, showing that asepsis of the skin is not often obtained.

For the past two years the author has been endeavoring to secure a sterile, adhesive rubber dam, which, when placed on the skin, would remain firmly adherent to it throughout the operation, at the end of which it might be removed. The mechanical, chemical and physical difficulties proved great stumbling-blocks, and one manufacturer after another declared it would be impossible to produce such an article. Finally all the difficulties were overcome, and an adhesive rubber dam produced[1] which answers all the purposes mentioned above. It is sufficiently adhesive to stand considerable traction without separating from the skin, and is not affected by water, antiseptics or wound secretions. It is prepared and sterilized, placed in sterile envelopes and these, again, placed in other envelopes, much after the method used in preparing the dry sterilized catgut. Thus prepared, the dam remains in a perfectly sterile condition, and can be applied to the prepared skin, and, as an extra precaution, its surface washed with any of the antiseptics or sterilizing solutions. If it is not sufficiently adhesive, a little ether spread over its surface will increase its adhesive properties. It is elastic and gives with the skin, being, in reality, a non-secreting, sterile, artificial derma, for the period of operation.

Owing to its elasticity, it may be applied to any part of the body. For laparotomies, it is spread over the abdomen, extending onto the symphysis pubis and covering the umbilicus. For herniotomy, it covers the inguinal region and genitalia, and it is in this operation that it is of the greatest practical importance, for we know that this field of all others is most frequently infected from the surrounding parts. In vaginal operations, it covers the entire perineum and prevents the soiling of the field from the rectum. In amputations, it entirely encircles the limb at the seat of operation. In operations on the eye, it covers all the remaining parts of the face. In fact, there is no part of the body to which it may not be readily applied, as is shown by the accompanying photographs.

METHOD OF APPLICATION.

The field of operation is prepared in the usual way. It is then thoroughly dried, washed with ether and the rubber is applied, the latter being put slightly on the stretch as it is brought in contact with the skin. The small quantity of ether retained by the skin increases the adhesive power of the dam. After it is applied, it is washed with alcohol or with any other sterilizing solution. The incision is now made through the dam, simultaneously with that in the skin, and to the same extent, as it stretches even more readily than the latter and there is no trouble in retracting it. The dam remains in position until the sutures are inserted and tied, after which it is lifted at one end, put a little on the stretch and divided at the points of suture in a manner similar to that of dentists in removing the dam from teeth.

Its second practical application is in all suppurating and draining wounds. In these cases it should be left on until suppuration and discharge have ceased so that it may protect the skin and prevent the erosion and eczema which are so frequently caused by the irritation of a purulent discharge. For this purpose it is particularly applicable in cases of artificial anus, cholecystostomy, gastrostomy, nephrotomy, suprapubic cystotomy and a draining, suppurative, circumscribed or general peritonitis.

We have used it in a number of cases at Mercy Hospital, with gratifying results, and feel that its simplicity of application and its self-evident advantages need no further word of comment.

100 State Street.

1. By Johnson & Johnson.

Politzer Air Douche for Inflating the Stomach.—Our foreign exchanges mention with approval Oehler's suggestion that the Politzer air-bag can be made to serve the purpose of inflating the stomach for diagnostic purposes. The subject reclines and takes a swallow of water. The tube of the air-bag is inserted in the nose, and as he swallows the water the air is expelled from the bag and passes with the water into the stomach. After repeating this simple maneuver three times the stomach is usually so inflated that its outlines can be accurately determined and its motor function tested by the peristalsis induced by the air.

THE PRESENT STATUS OF SPINAL SURGERY.*

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NEW YORK CITY.

(Continued from page 1117.)

FRACTURES (CONTINUED).

In those cases where no improvement follows the recovery from the shock, and yet the suspicion remains that a complete crush of the cord has not occurred, we should operate immediately. This divides the cases, therefore, as follows: 1. Those that evidently have complete destruction of the cord; they should not be operated on. 2. Those where, following the recovery from the shock, it is evident that the lesion of the cord has not been completely destructive and yet no improvement is noted. Operation here should be done as soon as these facts are determined. 3. Those where the lesion of the cord is incomplete and where the symptoms of compression are extending as evidenced by increasing paralysis and the enlarged area of anesthesia. Here operation should be undertaken immediately, as there is a hemorrhage, an inflammatory thickening, or some acute process present that threatens the destruction of the cord unless it is controlled. 4. Those in which improvement is noted at first but is arrested later. Operation in these should be done as soon as it is settled that the improvement has ceased. 5. Those who made a full recovery or almost so under the usual conservative methods, where the paraplegia or other symptoms develop at a later date. This is probably due to compression from callus, and the operation should not be delayed any longer than is essential to establish the fact that there has been a loss of function.

In our former paper we tabulated 103 cases of traumatic injuries to the spine, and divided them into two series, the pre-antiseptic and the antiseptic. In the former the deaths were 63 per cent.; in the latter 50 per cent. We have now been able to tabulate 227 cases in 185 of which all of the facts in regard to the result are known. This includes the 103 cases formerly tabulated. Of this number 59 died within a few days, and therefore the death may be said to have been hastened by the operation itself; 32 died at a later period, and usually from complications not resulting from the operative interference—91 deaths, therefore, in all, or 49.18 per cent., which corresponds very closely to my former statistics. Of course, this includes the cases dating back to the pre-antiseptic era, but it is hardly worth while at the present time to eliminate them from our statistics. If only those dying within the first few days are counted against the operative statistics the percentage is only 31.89. With these statistics before us there can be no doubt about the advisability of operative procedure, as compared with the conservative treatment. These figures could be still further improved by throwing out the pre-antiseptic cases.

We must also remember that this includes all of the patients who were operated on immediately, many of whom would in all probability have died of the shock alone. Thus we find out of 27 affected in the cervical region, operated on immediately, 21 died, while out of 10 operated on at a later period only 2 died; in the dorsal region, out of 49 operated on immediately 23 died, while of those who were operated on later, only 5 died from a total of 63. Even in the lumbar region the same disproportion exists; thus, from 6 immediate operations, 4 died, while from 22 done at a later period, only 4 were fatal.

The inserted table shows the results better than any description I can write.

Cervical Region.	Immediate Operation.	Later Operation.
Deaths	21	2
Recovery	0	2
Improved	2	1
Not improved	0	4
Subsequent death	4	3
	27	12

Dorsal Region.	Immediate Operation.	Later Operation.
Deaths	23	5
Recovery	4	10
Improved	9	18
Not improved	6	16
Subsequent death	7	16
	49	65

Lumbar Region.	Immediate Operation.	Later Operation
Deaths	4	4
Recovery	1	6
Improvement	1	6
No improvement	0	4
Subsequent death	0	2
	6	22

Sacral Region.	Immediate Operation.	Later Operation.
Death	0	0
Recovery	0	1
Improved	0	3
Not improved	0	0
Subsequent death	0	0
	0	4

These statistics are decidedly against immediate operation and we must urgently advise never operating until it is evident that the patient will not succumb to the direct effects of the injury. As soon, however, as he has recovered from the shock and his exact physical condition is known the operation should be performed.

This emphasizes the fact, which is already recognized, that the cervical is the most dangerous region for operation, and at the same time the least satisfactory in its ultimate result. The results in the dorsal region have improved since the earlier statistics, due probably to the improvement in technique, the greater rapidity with which the operation is done, and the fact that operations are done earlier than was formerly the case. The lumbar region shows a surprisingly small number of surgical interventions when it is taken into account that the safety of the operation in this region and the decided improvement following it was emphasized in all the earlier papers on this subject. I can not but feel that some of the incomplete recoveries recorded have been due to incomplete relief of the compression. Unless the operator has had considerable experience in spinal surgery, it is a very easy matter to overlook a compressing point. It is essential, in order to make the operation perfectly successful: 1, to remove enough laminæ to absolutely settle the fact that there is no remaining compression of the cord; 2, to chisel off any projecting bone, whether it be a portion of a vertebral body or bodies, or one or more articular processes; 3, to remove all blood clots, even though laminæ of unaffected verte-

* Presented to the Section on Surgery and Anatomy, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

bræ have to be removed to get beyond the hemorrhagic area; 4, to look out for thickening and compression resulting from inflammatory processes or injuries of the structures within the vertebral canal. It is sometimes difficult to be absolutely certain whether all compression has been done away with, but one usually recognizes the fact that the cord is smaller in the exposed area than it should be, and that its pulsation is not complete, not as full as in a normal cord. Care should be taken, therefore, that the cord dilates to its full extent, and that the pulsation returns. This can happen only where the cord has not been completely destroyed. And if the operator can not be sure of this fact without cutting the dura, he had better make an incision and definitely determine whether the integrity of the cord has been preserved. He will also sometimes recognize the fact that the dura is discolored, looks as though there has been an intradural hemorrhage, and while this accident, if it has occurred, has probably produced more or less disintegration of the cord itself, the dura should be opened and this blood clot extirpated, for one may look for a certain amount of regeneration in the cord provided it is relieved from the compression at a sufficiently early period and has not been completely destroyed.

After commenting on the former statistics of the operation, Keen said: "With such statistics before us it is impossible to draw any other conclusion than that operation is advisable in case extension directly after the accident fails to reduce the deformity. Of course, the limitations arising from the time that has elapsed since the accident, the region involved, and the severity of the lesion must be given due weight in reaching a conclusion in any given case. In an instance therefore of such gravity followed by such an immense percentage of deaths, if no operation be done it would seem to be advisable with our present experience, in all suitable cases to give the patients the real though often desperate chance that operation offers and that the operation should be done at a much earlier period than has hitherto been the rule." If this was the conclusion reached after a careful weighing of all the data presented up to that time, how much more emphatically may we advise operation with the present statistics before us.

The question may be asked: What are the dangers of the operation? And this applies equally to all conditions in which laminectomy is indicated. We have already spoken of the shock, and this necessarily includes the anesthetic, but, with our improved methods of handling shock at the present time, this need be much less than it was formerly. In the cervical region, one must remember the dangers of phrenic paralysis when the third and fourth, or even the fifth and sixth cervical vertebræ are interfered with, and here it is advisable that the operator should manipulate the cord as little as possible. Hemorrhage has been spoken of as a serious danger, but we have not found it so. If one is unaccustomed to operate in this region, he will lose much time in attempting to control bleeding by the application of hemostatic forceps. This is hopeless. If, however, he is prepared to make a rapid clearing of the laminæ and then pack the wound for a few minutes with firm compresses, the extravertebral hemorrhage will entirely cease. The hemorrhage arising from the vessels about the dura may be somewhat troublesome, but it usually stops in a very short time, and in our experience has never proved dangerous. In the cervical region, if the injury includes the costo-transverse foramen, hemorrhage from the vetebral artery, which has proven fatal several times, must be guarded against. Formerly the loss of cerebrospinal fluid was feared, but a number of cases have since been reported where this oozing went on for weeks and large quantities were lost, yet the patient survived and eventually recovered. In one of my cases a fistula persisted for ten or twelve weeks with no appreciable inconvenience to the patient. If the dura is opened, and closed again with fine catgut, or fine silk, there will be but little escape of cerebrospinal fluid. The weakening of the spine is perhaps an important element, particularly in those cases where a portion of a displaced body or a projecting articular process or processes have to be removed. Here supporting apparatus should be employed and the method of wiring the vertebra, as suggested by Hadra, may be considered. Finally, operation on that part of the spine below the first lumbar vertebra, in which we find only the cauda equina, comes under rather a different ruling from those where the medulla itself may be affected. Here a lesion is a nerve compression or nerve section and the results of operation would not differ from operative measures undertaken upon nerve tissue in any other part of the body.

I have operated on the following cases of fracture or fracture-dislocation of the spine since the publication of my last paper. These cases have not been published before and are therefore given somewhat in detail.

CASE 1.—W. W., a male, was admitted to the New York Post-Graduate Hospital, Aug. 9, 1897. Four years before, he was shot from a distance of four feet. The bullet was 32-caliber, and entered the mid-dorsal region a little to the left of the spine. Immediate paraplegia and anesthesia resulted. He was unconscious most of the time for the next four days. Vesico-rectal paralyses were also present, but improved after a few weeks so that he was able to control his bladder. At the end of a year he was able to move his right leg and had regained some sensibility in both. Improvement has been going on gradually for the past three years. His general health is very good.

Examination revealed normal organs, but there were bedsores on the buttock and ankles. Ankle-clonus was exaggerated, also the patellar reflexes, and the gluteal muscles were thrown into clonic spasm on pressure over the sciatic nerves. The feet were in constant plantar flexion.

Operation was performed on September 1, under ether anesthesia, the incision being from the sixth to the tenth dorsal spines, and down to the laminæ. The arches of the sixth, seventh, eighth, ninth and tenth dorsal vertebræ were removed. There were evidences of fracture of the seventh, eighth and ninth laminæ. The fracture crossed from one side to the other, running toward the right and from above downward. The superior right articular process of the tenth vertebra was also fractured and had not united. Pressure on the cord was present over the whole area, and there were also evidences of old pachymeningitis. Pulsation of the cord was much reduced before the removal of the compression, but improved afterward. Before the operation the left leg had to be strapped to the thigh to prevent the violent muscular spasms, which resulted from the least jar, from throwing him out of bed. He could walk with the aid of crutches, as long as this leg was strapped up, but if it was allowed to dangle it would throw him over. When he left the hospital the reflexes were normal, he had recovered almost normal power in his adductor muscles on both sides, and in his quadriceps extensors, while the areas of anesthesia were markedly diminished. He has been heard from within a few months, and has recovered a great deal of the power in both limbs, although he is not yet able to do without crutches and has no trouble either with bladder or rectum.

CASE 2.—A. L., a male, on July 19, 1898, while diving in shallow water, struck upon his head, and was immediately paralyzed. He was admitted to the New York Post-Graduate Hospital on July 27, and at this time had complete paraplegia and anesthesia below the third rib. He had had syphilis two

years before. Priapism was present. He could extend his wrists slightly and flex the elbows. Vesico-rectal paralysis, cystitis and bed-sores were present. The areas supplied by the ulna nerve were still sensitive.

On July 28, I took an *x*-ray, which confirmed the diagnosis of fracture-dislocation of the fifth cervical vertebra. Operation, August 12, was under ether anesthesia, with removal of the laminæ of fourth, fifth and sixth of the cervical vertebræ. The fifth arch was compressing the cord, which did not appear to be crushed. There was no hematoma, and the dura was not opened. Pulsation returned as soon as compression was removed. In a few days sensation began to return, and he could use his arms considerably, while the priapism disappeared and he seemed to be gaining rapidly. His bladder symptoms, however, did not improve, and he began to give signs of uremia. Then, about September 1, he was suddenly completely paralyzed again and died in uremic coma, September 25. Unfortunately the house staff allowed his body to be removed without asking for an autopsy, so that it was impossible to determine the cause of the return of the paralysis.

CASE 3.—B., a female, was aged 14, with a family history of tuberculosis on the mother's side. Both parents, three brothers and four sisters were all healthy.

Previous History.—She had measles, whooping-cough and pneumonia in infancy, but was otherwise in excellent health and robust until the present trouble, with the exception of a few months prior to its onset, when she had nervous attacks in school; she was then about the age of puberty. Her first menstruation was very scanty and came four days before the present trouble. She menstruated four weeks later and has not since. In November, 1897, she fell down about sixteen steps, landing so that her head was thrown forward on her chest and her feet backward. She felt no injury and no pain at the time, and forgot about it until reminded of it six weeks later.

Present Trouble.—About Jan. 15, 1898, she was taken with la grippe, recovered partly, but felt very severe pains in the muscles of the legs and back. All day, January 22, she had very severe pains between the shoulders, and on the 23d, when dressing, she suddenly found that her arms dropped while combing her hair, and she could not grasp a comb or pins. Sudden weakness came over her and she became hysterical. She then walked some distance and got into bed. Her neck became rigid and her head was thrown backward. She could not use her legs and left arm, but could the right from the elbow down, though not the fingers; the face was flushed and body cold, but temperature 104. There was total loss of sensation below the seventh cervical vertebra, retention of urine and no control of bowels—all these symptoms were present the first day. On January 23 the bladder became distended to the umbilicus and urine dribbled. The condition was unrecognized by the physician. When catheterized the urine was ammoniacal—this was two or three days later. There was no improvement at the end of the week, during which time all these conditions persisted and also great pain in the neck. An osteopath was then called, and discovered a lump about the seventh cervical, which he is said to have massaged away. With massage the stiffness and pain disappeared, and the bowels, which resisted cathartics, were made to move with fair regularity. This occurred within thirty-six hours, but there was no further benefit derived from this treatment, which lasted six weeks; by this time the patient had lost considerable flesh. The temperature persisted at about 103 F., nightly. On the fifth day of the disease bed-sores developed on the heel and elbow; they healed in five months. Others have since developed and healed.

The patient was then removed from Utah, where she was taken sick, to the Presbyterian Hospital, in Chicago, where she remained seven weeks, growing thinner every day until almost a skeleton. Her mother says that there the case was pronounced incurable. From Chicago she went with a trained nurse to Bayonne, N. J., her home, in May. Her general health improved greatly. A nerve specialist made there a diagnosis of myelitis. Her temperature became normal soon after reaching home and she regained some of her lost flesh. With careful catheterization all cystitis disappeared, but there was no improvement in muscular power until the present time. Electricity has been used faithfully. There was a partial return of sensation, which is variable in degree and location.

This improvement persisted up to the last three weeks. Then her appetite failed. Temperature became 103 to 104, nightly, and she seemed weaker; a lump appears at intervals on her back at the seventh cervical, and is about the size and thickness of a watch.

The mental condition has been good, and she has never been unconscious, but sometimes petulant. Cathartics and catheters are still necessary.

Physical Examination: The tongue is coated with dry, brown fur. The breath is sour, the nose obstructed, the neck asymmetrical—enlargement on the right side, soft and over the sterno-cleido-mastoid muscle. As to the thorax, the veins in the median line are prominent. The lungs show diminution of resonance on the left side, anteriorly, and rough, harsh breathing sounds over this area on deep inspiration—the same posteriorly. The heart is negative. There is an anemic bruit in the veins of the neck. The liver is apparently normal, also the spleen. Bed-sores are present on the hips and in the lumbar region and heel. These show—first two regions—reparative changes.

Extremities: The right arm muscles are weak and flabby, with much wasting of the flexors of the forearm; the dorsal and palmar interossei and ulnar groups wasted away. The arm can be raised, also the forearm flexed on the arm, but no flexion of the hand is possible. Extension of the hand is controlled. The tendons are not contracted. There is anesthesia of the dorsal surface of the fourth finger only. In the left arm less wasting of the muscles is evident, but the shoulder group shows motor power only. There is no anesthesia. The right leg has partial anesthesia below the knee, the patellar reflex absent, and no ankle-clonus. The left shows motor paralysis and anesthesia of the whole extremity.

There is pain on palpation over the spinous process of the sixth cervical vertebra; crepitation; tendinous or blood clot.

The abdomen shows anesthesia over the surface extending to a line between the nipple line and the clavicles.

The *x*-ray revealed displacement of the fifth cervical vertebra.

Operation: On September 15, Dr. Lloyd made an incision over the spines of the fourth, fifth and sixth cervicals, hemorrhage being controlled by gauze packing. The fifth vertebra was found dislocated and pressure on the cord by its body very marked. Pulsation in the cord was absent. The dislocated vertebra was reduced by traction on the head and body and manipulation. The head, neck and chest were put in plaster after closing the wound. The patient stood the operation very well, but with no improvement.

CASE 4.—A male of previous good health, fell through an elevator shaft, receiving a fracture of the spine, with complete paraplegia, vesicorectal paralysis, and obliteration of the reflexes. There was also anesthesia below the iliac crests, bedsore over the lower sacral region, and gangrene of the toes of the left foot. This was his condition at the end of six weeks, when he was brought to me.

He was 28 years old, and had measles and typhoid fever when a boy. He had pneumonia twelve years before the accident, and seven years before had two sores on the penis. The latter were treated locally, and the patient's physician told him they were chancres, but gave no constitutional treatment.

When he fell down the elevator shaft, a distance of sixty feet, he struck on the lower spinal region, or buttocks. He was not rendered unconscious by the fall, but was unable to rise, as his lower extremities were completely paralyzed. The rectum and bladder were also involved. There was kyphosis in the lower dorsal region, the eleventh and twelfth vertebræ being most prominent. When I saw him his condition was fairly good, and he had partial control over the bladder, but his bowels still moved involuntarily. The toes on the left foot were gangrenous, the heart and lungs negative, and anesthesia extended over the areas supplied by nerves arising from and below the fifth lumbar segment (Starr). He voided urine voluntarily on the second day, and was out of bed the eighteenth.

Three weeks after operation there had been improvement in his general condition. The gangrene of the toes and the bed-sores were almost well. Control over the bladder was almost normal and there was also partial control over the rectum, also considerably more motion than before operation, the improvement chiefly in the adductors and abductors of thighs. There was also some motion in the flexors of the knee and in the quadriceps extensors. The right leg was better than the left. Anesthesia was also less than before, and most of the areas of lessened sensation before operation were now hyperesthetic, and spots of sensation were present in the anesthetic areas. The reflexes also were returning. Incision was from the eleventh dorsal to the second lumbar, inclusive, with removal of these arches. The cord was plainly seen to be pushed anteriorly and to the left side. The portions of bone encroaching on it were removed when the cord, which before had not been larger than a lead pencil and non-pulsating, expanded to its full size and pulsation returned. The dura was opened and no general destruction of the cord or blood clot was present. Improvement followed.

NOTE.—Feb. 28, 1901. This patient has been heard from again within the past few days, and he reports that he still continues to improve.

FRACTURES.

CASE 104.—Operator, Warren, 1867. Dorsal region; duration, 4 days. Projection over 6th D. crepitus; senses comatose; paraplegia, priapism, anesthesia, tympanites, paralysis of bladder. Incision 8 inches long; 5th D. spine fractured and removed with forceps. Fracture 6th D. lamina and trans. process; dura punctured. Intradural clot found on cord and left. Improvement unmistakable. Plantar reflex observed on second day; third day sensation along thighs and reflexes good below seat of fracture. Death on eighth day. Cause of death and post-mortem observations: Fracture of pelvis and left laminæ of 5th to 7th D.; comminuted fracture of 5th, 6th and 7th bodies, twisting of spine. Death due to infection from cystitis. Reference: An. of Surg., vol. xvii, p. 439.

CASE 105.—Operator, Fitzgerald, 1882. Upper dorsal region; duration, 2 hours. Paraplegia and anesthesia below lesion; vesical and rectal paralysis. Removal of fractured laminæ and reduction of dislocation. No improvement. Death some days later on moving the head. Reference: Syme; Aust. Med. Jour., 1893, p. 121.

CASE 106.—Operator, Fitzgerald, 1882. After a formal laminectomy—a new fracture. Canal reopened, projecting part of body removed. No functional result. Reference: Idem.

CASE 107.—Operator, Balow, 1886. Paraplegia and absence of reflex. Death on eighth day. Reference: Glasgow Med. Jour., 1892, p. 1, table viii.

CASE 108.—Operator, Balow. Duration, 6 weeks. Fracture with paraplegia. Return plantar reflex, motion of big toe. Death after 3 months; myelitis. Reference: Idem.

CASE 109.—Operator, Balow. Fracture with paraplegia. Improvement. Reference: Idem.

CASE 110.—Operator, Schede, 1886-90. Dorsal region; duration, 13 months. Fracture of 5th and 6th D.: anesthesia below umbilicus; paraplegia complete; vesical paralysis, exaggeration of reflexes gradually becoming worse; bedsores, anesthesia. Resection 5th and 6th D. arches: fragments removed; meninges normal. No improvement. Death from exhaustion 1 year later; gangrene. Post-mortem: Fracture of 7th and 8th D. bodies; displacement into canal. Reference: Rieder, Yahr. d. Hamburger Statts Krank., 1892, vol. ii, pp. 236-301.

CASE 111.—Operator, Schede, 1886-90. Dorsal region; duration, 18 months. Fracture of clavicle and 6th D. Anesthesia almost up to mammæ; paraplegia, paralysis of bladder and rectum; reflexes exaggerated; gradual increase in symptoms. Four dorsal arches removed; body of 6th displaced into canal, crushing cord. No improvement. Reference: Idem.

CASE 112.—Operator, Schede, 1886-90. Dorsal region; duration, 16 weeks. Paraplegia and anesthesia; absence of patellar reflex; priapism, ejaculation, vesical paresis. Removal of arch of 6th D. which pressed on cord. Gradual improvement. Return of patellar reflex in 4 months. Could walk after 5 months. Almost complete recovery. Reference: Idem.

CASE 113.—Operators, Wooster and Montgomery, 1889. Cervicodorsal region. Paraplegia of lower limbs; partial paralysis of upper limbs. Removal of 6 bony fragments; cord normal. Paralysis increased; dyspnea. Death on 36th day. Post-mortem: Comminuted fracture of 5th and 6th C., 1st D.; cord crushed; pus at this point. Reference: Occidental Med. Times, 1889, p. 497.

CASE 114.—Operator, Woodbury. Dorsal region; duration, some weeks. Complete motor and sensory paraplegia. A slight sensibility over right great toe; paralysis of bladder and rectum. Ablation of 3rd, 4th and 5th dorsal arches. No improvement for some time, when extension and counter extension were applied; then rapid improvement. Seventeen months later practically well. Reference: N. Y. Med. Jour., 1890, vol. i, p. 1007.

CASE 115.—Operator, Ewing Mears. Lumbar region. Complete motor and sensory paraplegia. Removal of 1st lumbar arch. No pulsation in cord. Impossible to reduce fracture of body. Improvement. Reference: Phila. Med. News, 1890, vol. i. p. 210.

CASE 116.—Operator, Dalton, 1889. Dorso-lumbar region; duration, some hours. Complete motor and sensory paraplegia below great trochanter. Arch of 12th D., which compressed cord, removed. A splinter pierced cord. Return of sensibility. Death on 3rd day; hyperpyrexia. Reference: St. Louis Courier of Med., vol. i, p. 128.

CASE 117.—Operator, Armstrong. Dorsal region. Complete paraplegia; bedsores, pyrexia. Resection of 12th D. to 1st L. arches. meninges normal; cord atrophied; marked displacement of vertebral body. No improvement. Death on 8th day. Post-mortem: Fracture of 3rd and 12th dorsal bodies. Purulent infection, probably from bedsores. Reference: Reports U. S. M.-H., Washington, D. C., 1889, p. 2712.

CASE 118.—Operator, Bird. Dorsal region; duration, 1 year. Motor and sensory paraplegia; diarrhea; atrophy of lower limbs; bedsores, pains in back and thighs. Resection last 3 dorsal arches. Meninges bent at right angles and appeared empty. Area of distribution of crural br. of genito-crural nerve regained sensibility on right. Very slight improvement. Reference: Aust. Med. Jour., 1893, p. 115.

CASE 119.—Operator, Bird. Dorsal region; duration, 48 hours. Great pain; motion diminished, also sensibility, patellar and plantar reflexes. Depression over 12th dorsal. Removal of superior left articular process and arch of 12th D., which was fractured: removal of a dural blood-clot; hemorrhage. Following day all symptoms improved. Almost complete recovery. Reference: Idem.

CASE 120.—Operator, Lamplasi, 1890. Dorsal region. Complete motor and sensory paraplegia; vesical paralysis. Removal of 9th and 10th dorsal spines and arch of 10th dorsal. Third day vesical paralysis disappeared. Complete cure. Reference: Com. Fatta Sella vi. a Ad. dela Soc., Ital. di Chir., Bologna, il 116, 1889-90.

CASE 121.—Operator, England, 1890. Cervical region. Paraplegia up to 3rd rib; paresis of both arms; priapism. Trephining. Death 6th day, asphyxia. Post-mortem: Fracture 6th cervical: destruction of cord. Reference: N. W. Lancet and Pharm., Winnipeg, 1890, p. 287.

CASE 122.—Operator, Terrier, 1890. Lumbar region; duration, long time. Considerable bony displacement, complete paraplegia, intense pain in lower limbs. Crushing so complete that removal of a lamina gave access to subjacent body. Cord destroyed. Persistence of paraplegia and pain. Reference: Prog. Med., 1891, p. 377; Bull. a Mem., 1891, p. 682.

CASE 123.—Operator, Knox, 1890. Dorsal region; duration, 36 hours. Complete motor and sensory paraplegia; violent cramps in legs. Removal of arch and articular processes of 10th D.; replacement of 11th dorsal, which was dislocated; pulsation gradually returned. Complete sensation following day; some motion of toes; no other improvement for 2 months. In 10 months could walk without assistance. Decided improvement. Reference: Glas. Med. Jour., 1891, i, 241.

CASE 124.—Operator, Weiss, 1890. Dorsal region; duration, 36 days. Complete motor paralysis of left leg; incomplete of right; sensation and reflexes normal; vesico-rectal paralysis; later, paraplegia complete. Removal of 11th D. spine and arch, also 10th D. arch. Premeningeal connective tissue red, injected; marked decrease in size of canal. Next day some motion; 3rd day, involuntary but conscious micturition; disappearance of incontinence. Cured. Reference: Revue Med. de l'Est, 1891, p. 449.

CASE 125.—Operator, Bircher. Dorsolumbar region. Fractured vertebra had contused cord; arch removed, dura opened; sutured with catgut. No improvement. Reference: Bull. a Mem., 1891, p. 680.

CASE 126.—Operator, Roux, 1890. Dorsolumbar region; duration, 5½ months. Complete motor and sensory paraplegia; vesicorectal paralysis; atrophy and edema of lower extremities. No response to Faradic current; contraction with galvanism. Reflexes absent. Anesthesia below Poupart's ligament; sacral bedsore. Resection of 12th D. and 1st L. arches. Canal narrowed by body of 1st L.; cord bruised. Incision of dura. Slight improvement. Death from infection from bedsores, 2 months later. Reference: Chipault, op. cit., 1893, p. 91.

CASE 127.—Operator, Montprofit. Dorsolumbar region; duration, 9 months. Complete motor and sensory paraplegia; vesicorectal paralysis. Resection of 1st and 2nd L. arches. Canal obliterated; cord only a fibrous tract. No improvement. Reference: Idem, p. 90.

CASE 128.—Operator, Anger, 1890. Lumbar region; duration, 1 month. Complete motor and sensory paralysis; vesicorectal paralysis. Resection of 12th D. and 1st L. arches. Gradual recovery of some sensation and muscular power; improvement of bedsores. Death from nephritis 1 month later. Cause of death and post-mortem observations: Dislocation of 1st L. body backward. Cord nearly severed and pushed backward from left to right. Ascending and descending degeneration. Reference: Idem.

CASE 129.—Operator, Poirrier, 1890. Dorsal region; duration, 4 days. Complete paraplegia, anesthesia and thermal anesthesia. Resection of 11th and 12th D. and 1st L. arches and artic processes of inferior right of 11th, superior left of 12th L. Careful reduction of post. dislocation of 12th body by extension and counter-extension. After several days, improvement in sensibility and rectal paresis. No motor improvement. Result: Some improvement. Reference: Idem, p. 101.

CASE 130.—Operator, Chipault, 1890. Lumbar region; duration, 36 days. Complete motor and sensory paraplegia; bedsores; vesicorectal paralysis. Removal of 11th and 12th D., 1st and 2nd L. arches. No pulsation. Removal of projecting border of displaced body of 1st L. Destruction of cord. Very slight improvement in anesthesia. Reference: Idem, p. 93.

CASE 131.—Operator, Chipault, 1890. Dorsolumbar region; duration, 3 days. Complete paraplegia, anesthesia, vesicorectal paralysis. Of reflexes, cremasteric present; patellar decreased; plantar suppressed. Removal of 11th and 12th D. and 1st and 2nd L. arches. No extra dural hemorrhage. Large intradural clot between node of cauda equina. No improvement. Death 2 months later. Reference; Idem, p. 105.

CASE 132.—Operators, Church and Eisendrath, 1890. Cervical region; duration, 20 hours. Complete paralysis of trunk, abdomen and extremities; anesthesia up to 5th D. spine; posteriorly and anteriorly to superior border of 3rd rib. Absence of reflexes. Vesicorectal paralysis; depression of 5th and 6th cervical processes. Right lamina of 5th and 6th removed. Death from asphyxia in 8 hours. Reference: American Jour. of Med. Sci., 1892, p. 395.

CASE 133.—Operators, Church and Eisendrath, 1890. Dorsolumbar region; duration, 62 hours. Paralysis of lower extremities and abdominal and intercostal muscles: anesthesia to superior border of 3rd rib; all reflexes gone except left cremasteric; priapism, rectal and vesical paresis. Left lamina and spine of last dorsal fractured and 1st L. dislocated forward; dislocation reduced. Death from asphyxia and shock. Post-mortem observations: Fracture of 12th D.; dislocation of 1st D. and 2nd L. Reference: Idem.

CASE 134.—Operators, Church and Eisendrath. Sacral region; duration, 2 years and 3 months. Motor and sensory paraplegia, anesthesia; rectal and vesical paralysis. Two years later had im-

proved, but had complete anesthesia from four last sacral nerves. No reflexes except cremasteric. Incision over sacrum. Canal obliterated up to inferior border of 1st sacral segment. Fragments removed. Sacral root below could not be found. Month later anesthesia only in feet, gluteal regions, sacrum and posterior surface of penis; three mo. later lateral motion of feet; some erections. Result: Improved. Reference: Idem.

CASE 135.—Operator, Korteweg, 1889. Dorsolumbar region; duration, 13½ months. Partial paraplegia with anesthesia up to knee; rectal and vesical paralysis. Resection of 12th D. and 1st L. Meninges hard and resistent. Could walk with apparatus. Result: Some improvement. Reference: Chipault.

CASE 136.—Operator, Korteweg, 1891. Dorsal region; duration, 15 weeks. Paraplegia and anesthesia up to 6th intercostal space; all reflexes lost. Resection of 2nd, 3rd and 4th dorsal arches. No improvement. Death 9 months after from pyemia from bedsores. Reference: Idem.

CASE 137.—Operator, Tilanus, 1890. Dorsal region; duration, 7 months. Total paraplegia and anesthesia below umbilicus. Resection of 9th, 10th and 11th D. arches; dura unopened. No improvement. Reference: Idem.

CASE 138.—Operator, Tilanus, 1893. Dorsal region; duration, 3 months. Complete paraplegia and anesthesia below umbilicus, just above zone of hyperesthesia. Resection of 9th and 10th D. arches. No improvement. Reference: Idem.

CASE 139.—Operator, Lucas Championniere, 1891. Dorsal region; duration, 14 months. Removal of 4th and 5th D. arches and a hypertrophic callus, which compressed cord on side and in front. Three months later could walk without cane. For six months gradually became worse. Reference: Idem.

CASE 140.—Operator, Ridenour, 1891. Dorsal region; duration, 1 hour. Paraplegia and pain on motion; depression at 7th D. Removal of 7th, 8th and 9th D. arches; reduction of displaced 7th body. Rapid return of sensibility and control of sphincters. Recovery. Reference: Columbus Med. Jour., vol. x, p. 151.

CASE 141.—Operator, Boyle, 1891. D. region; duration 2 months. Complete motor and sensory paraplegia; priapism, vesical paresis. Removal of 9th, 10th, 11th and 12th D. and 1st L. arches. Marked improvement. Reference: St. Louis Med. and Sur. Jour., vol. ii, p. 308.

CASE 142.—Operator, Audry, 1891. Cervical region; duration, 24 hours. Paraplegia of all 4 extremities; anesthesia below internal aspect of arms; right pupil contracted; ptosis of right eye. Resection of 5th and 6th cervical arches. Cord compressed backward by body. Death in 12 hours from respiratory failure. Post-mortem observations: Fracture of 5th cervical arch and body; cord destroyed; extradural hemorrhage.

CASE 143.—Operator, Boiffin, 1891. Lumbar region; duration, 3 months. Complete paraplegia on left; incomplete paraplegia on right side. Removal of 2d and 3d L. arches. Spine compressed by inferior fragment of 2nd lumbar. Death from nephritis 2 months later; improvement at first. Reference: Memoirs and Discussions of French Cong. of Surg., p. 516.

CASE 144.—Operator, McBurney, 1891 (Starr). Lumbar region; duration, 5 months. Complete motor and sensory paraplegia; vesical and rectal paresis. Removal of 1st, 2nd and 3rd L. arches; dura incised. Vesicorectal improvement at end of 3 months; 6 months later no motor improvement. Result: Slight improvement Reference: Am. Jour. Med. Sci., vol. ii, p. 26; Case 12.

CASE 145.—Operator, McCann, 1892. Dorsal region. Paraplegia. Removal of arches which were driven down on cord; fragments removed. Death subsequently. Reference: Trans. of Am. Surg. Asso., vol. ix, p. 216.

CASE 146.—Operator, McCann, Jr., 1891. Dorsolumbar region. Duration, 3 months. Anesthesia below knees; paraplegia. Removal of arches of 12th dorsal and 1st and 2nd lumbar. Recovery. Reference: Idem.

CASE 147.—Operator, Moullin, 1891. Lumbar region; duration, 9 weeks. Paraplegia; anesthesia most marked on the right; some vesicorectal paralysis. Improvement, then stationary. Removal of 2nd and 3rd lumbar arches and inferior right articular process of 2nd lumbar, which compressed cord. Improvement; recovery. Reference: London Lancet, 1892, vol. i, p. 359.

CASE 148.—Operator, Wyeth. Dorsal region; duration, 4 months. Complete paralysis from level of umbilicus down, of bladder and rectum. Removed laminæ of 6th, 7th and 8th D. vertebræ and found cord almost completely severed. No improvement. Reference: N. Y. Med. Jour., 1892, vol. ii, p. 273; also Annals of Surgery, vol. xx, p. 273

CASE 149.—Operator, Wyeth, 1892. Dorsal region. Removal of 7th and 8th dorsal arches. No improvement. Reference: N. Y. Med. Jour., 1892, vol. ii, p. 273.

CASE 150.—Operator, Urban. Dorsolumbar region; duration 6½ month. Complete motor paraplegia; complete anesthesia in feet; incomplete anesthesia in thighs; vesical paresis; bedsores; patellar reflex exaggerated; superficial reflex absent. Resection of 12th dorsal, 1st, 2nd, 3rd and 4th L.; dura adherent; incised on right side. Traces of cicatricial tissue; body of 1st L. displaced; canal narrowed. Complete recovery. Reference: Gesell. Chir., 21st Cong., 1892, p. 214.

CASE 151.—Operator, Urban. Lumbar region; duration 9½ mo. Complete motor and sensory paraplegia; rectovesical paresis. Temporary resection of 11th and 12th D., 1st, 2nd, 3rd and 4th L.; 12th D. body displaced; no pulsation. Pulsation returned. Partial return of sensibility in 24 hours. Reference: Idem.

CASE 152.—Operator, Israel, 1892. Motor and sensory paraplegia; rectovesical paresis. Two months later, no improvement. Reference: Idem, p. 111.

CASE 153.—Operators, Verdelet et Venot. Lumbar region; duration 1¼ months. Right monoplegia; no anesthesia; vesicorectal paralysis. Removal of splinter on right of 1st lumbar. No improvement; increase in cystitis. Death 12th day. Reference: Societe d'Anat. et Physiol de Bordeaux, June 13, 1892; Jour. de Med., p. 311, 1892.

CASE 154.—Operator, Park, 1892. Dorsal region; duration, 2 days. Motor and sensory paraplegia. Resection of 10th, 11th and 12th arches. Canal filled with clot and debris. Improvement of anesthesia; none of paraplegia. Reference: Med. News, 1892, vol. i, p. 546.

CASE 155.—Operator, Bruns. Cervicodorsal region. Paraplegia; anesthesia up to 6th rib; vesicorectal paralysis; priapism, contraction of pupils. Removal of arches of inferior cervical and superior dorsal. Improvement in flexors and possibly in extensory power of arms. Death. Post-mortem observations: Total degeneration of cord. Lower cervical, upper dorsal. Secondary degeneration of points of myelitis. Reference: Mercerdi Med., 1893, p. 9.

CASE 156.—Operator, Koerb. Dorsal region. Complete paraplegia; all reflexes gone; paralysis of sphincters. No improvement. Death 10th day. Post-mortem observations: Fracture 10th dorsal; cord crushed. Reference: Idem.

CASE 157.—Operator, Le Dentu. Dorsolumbar region; duration, 28 days. Complete motor and sensory paraplegia; vesicorectal paresis; fracture of femur. Removal of 11th and 12th dorsal and 1st lumbar arches. Death from pyelonephritis. Post-mortem observations: Cord crushed. Reference: Chipault, loc. cit.

CASE 158.—Operator, Villar, 1892. Dorsal region; duration, 3 days. Depression in dorsolumbar region; motor and sensory paraplegia; patellar reflexes present; plantar and cremasteric gone; rectovesical paralysis. Incision from 10th dorsal to 1st lumbar; compression removed. Improvement. Reference: Idem.

CASE 159.—Operator, Van Kleef, 1892. Dorsolumbar region; duration, 6 weeks. Total motor sensory paraplegia and rectovesical paresis. Removal of 12th dorsal and 1st lumbar arches; cord compressed by fragments. Marked improvement in two days. Reference: Chipault.

CASE 160.—Operator, Zavaleta, 1892. Lumbar region; duration, 7 days. Motor and sensory paraplegia; vesicorectal paralysis. Fragments removed; extensive ascending myelitis. Death from respiratory paralysis on 43rd day.

CASE 161.—Operator, Wyeth, 1890-91. Dorsolumbar region; duration, 8 months. No motion below hips; no sensation from junction of middle with upper third of thigh; urine overflows. Laminæ of 11th and 12th D. and 1st L.; cord small and soft, and no direct compression. No improvement. Death 3 years later; cause unknown. Reference: Annals of Surgery, vol. xx, p. 154.

CASE 162.—Operator, Wyman, 1892. Lumbar region; duration 8 weeks. Complete motor and sensory paralysis below last dorsal nerve; vesical and rectal paralysis; cystitis. Removal of 2nd L. arch; cord atrophied. Death 15 hours later. Reference: Annals of Surgery, vol. xix, p. 661.

CASE 163.—Operator, Riggs, 1893. Dorsolumbar region; duration, 4 days. Complete paralysis; bladder and rectal paralysis. Removal of last dorsal and 1st L. arches. Recovery from operation. Slight improvement. Reference: Idem.

CASE 164.—Operator, Mayer, 1894. Lumbar region; duration, 17 months. Paralysis, motor and sensory; bladder symptoms; cystitis. First and 2nd L. arches removed; dura adherent to cord. Recovery from operation. Marked improvement. Reference: Annals of Surgery, vol. xxvi, p. 207.

CASE 165.—Operator, Park, 1892. Male, 37; had had Pott's disease some time before; struck by train; paraplegia; anesthesia limited to skin. No lesion or fracture found. Death on eighth day. Post-mortem observations: Fracture found at region of Pott's disease. Reference: Med. News, 1892, i, p. 546.

CASE 166.—Operators, Weller and Van Hook, 1891; reported by Starr. Third dorsal region; duration 16 hours. Wound from revolver bullet; complete paralysis of lower limbs. Removal of 3rd D. arch; cord found reduced to a pulp. Death 21 days later. Reference: Am. Jour. of Med. Sci., vol. cili, p. 395.

CASE 167.—Operator, Conley, 1891. Fifth dorsal region. Revolver wound at 5th dorsal; complete paralysis of lower limbs. Retention of urine and feces. Fifth dorsal arch removed; cord nearly sound and bullet found in back of vertebræ; iodoform drain. No union because of escape of cerebrospinal fluid. Death 31 days later. Reference: Idem.

CASE 168.—Operator, Bouffleur, 1891. Duration 24 hours. Fracture 5th and 6th C. vertebræ; anesthesia of upper and lower limbs. Exploratory laminectomy at 5th C. Death in 8 hours. Reference: Idem.

CASE 169.—Operator, Halsted, 1891. Second D. and 5th L. dislocated, 12th D. fractured; duration, 62 hours. Struck by grip of cable car; paralysis of lower limbs and trunk. Laminectomy at 12th D.; reduced dislocation at 2nd D. and 5th L. Death in 15 hours. Reference: Idem.

CASE 170.—Operator, Frank, 1891. Sacral region; duration, 2 years. Partial anesthesia of legs and complete of rectum and penis; two bedsores. Portion of sacrum removed. Some improvement. Reference: Idem, p. 405.

CASE 171.—Operator, Golding-Bird. Dorsal region; duration, 72 hours. Severe pain across back, which increased with movement. Paralysis of lower limbs (partial); partial anesthesia of legs and abdomen; reflexes normal; ankle clonus; paralysis of sphincter ani. Removal of 11th and 12th D. arches and blood-clot; wound closed with silver; no drain used; extension made by traction. Sensation and motion steadily improved. Complete recovery. Reference: Br. Med. Jour., May 23, 1891.

CASE 172.—Operator, Warren. Dorsal region; duration, 4 days. Paralysis of legs; cold feet and semistupor; fever. Dura opened and blood-clot found. Death. Post-mortem observations: Fracture of spine and pelvis; torsion and compression of cord. Reference: Annals of Surg., xvii, 1893, p. 439.

CASE 173.—Operator, Pauzer, 1893. Lumbar region; duration 3 years. Male, 40. Fell 30 feet; hysterical, no pain; mind gradually gave way; right limb then painful and weak. Again injured back 1 1-3 years after; 7 months after was found in a stupor; pain on pressure in lumbar region. Removal of 4th and 5th L. arches; dura adhesive; cord normal. Death 55 hours after. Reference: Trans. Indiana Med. Soc., 1893, p. 47.

CASE 174.—Operator, Pauzer. Lumbar region; duration 4½ years. Male, 40; jumped 35 feet, landed on feet, became unconscious; rectal and vesical paralysis; 3 months later suffered from severe coccygodynia; 2 years later severe pain on pressure; intermittent paralysis of right limb; head symptoms; right arm cold, weak and numb; unconscious spells; pupils constantly dilated. Removal of 2nd and 3rd L. arches and 4th and 5th right laminæ; 2nd lamina and anterior processes thickened; dura thickened and adherent; pulsation present; drainage by rubber tubes. Great pain on right side for 24 hours after. Recovery. Reference: Idem.

CASE 175.—Operator, Pyle, 1893. Dorsal region; duration, 11 hours. Loss of sensation and motion below hips; loss of reflexes; severe pain; rectal and vesical paralysis. Removal of fragments; cord contused. Pain immediately disappeared; sensation and motion returned one week later. Recovery. Reference: Annals of Surg., xix, p. 666.

CASE 176.—Operator, Pyle, 1893. Dorsal region; duration, 6 days. Loss of sensation, motion; rectovesical paralysis; girdle pains. Fragments removed. Pain disappeared, but no other recovery in three months. Slight improvement. Reference: Idem.

CASE 176.—Operator, Wyeth, 1890. Dorsal region; duration 7 months. Paralysis below pelvis; rectal and vesical paralysis. Some fragments removed. Gradual improvement; recovery. Reference: Idem.

CASE 178.—Operator, Wyeth, 1892. Dorsal region; duration, 4 months. Complete paraplegia and anesthesia below umbilicus; rectal and vesical paralysis. Cord almost destroyed; 6th, 7th and 8th arches removed. No improvement. Reference: Idem.

CASE 179.—Operator, Wyeth, 1890. Dorsal region; duration, 8 months. Paralysis below hips; vesical paralysis. Removal of 11th and 12th D. and 1st L. arches. No improvement. Died 2 months after; cause unknown. Reference: Idem.

CASE 180.—Operator, Wyeth, 1893. Dorsal region; duration, 7 mo. Complete anesthesia and paraplegia below 6th D. spine and ensiform cartilage; rectal and vesical paralysis. Removal of 3rd and 4th D. arches and fragments of bone; cord found cut. No improvement. Reference: Annals of Surg., xx, p. 153.

CASE 181.—Operator, Wyeth, 1894. Dorsal region; duration, 2 months. Paralysis below crests of ilia; vesical and rectal paralysis. Removal of 8th to 11th D. arches. No improvement; death. Reference: Idem.

CASE 182.—Operator, Ellinwood, 1894. Dorsal region; duration, 3 months. Female, 19; fell 20 feet; complete paralysis below umbilicus; incontinence of urine and feces; in plaster jacket for 2 months; line of anesthesia lowered to pubes. Seventh to 11th D. arches removed; dura adherent; large mass anterior to cord which could not be reached; iodo-collodion dressing. Gradually failed; death. Reference: Occ. Med. Times, viii, p. 581, 1894.

CASE 183.—Operator, Ellinwood, 1894. Dorsal region; duration, 42 days. Male, 34; fell 20 feet; no pain and not unconscious; complete motor and sensory paralysis in lower limbs; bladder paralyzed. Sixth to 10th D. arches removed; pressure removed; cord edematous; blood-clot found. Slight movement and sensation after 2 weeks; developed cough and had dulness on left side; tubercle bacilli found. Died 2 months later. Post-mortem observations: Tuberculosis found: 8th D. was driven into 9th D., which injured cord. Reference: Idem.

CASE 184.—Operator, Roberts, 1894 Region, dorsal. First operation five months; gradual loss of power and sensation below crests of ilia, rectal and vesical paralysis. Removal of 9th and 10th D. arches, bone fragments removed. Regained sensation in testicles. Ten months later, second operation. Complete loss of power below iliac crests. Incision in lumbar region, no fragments discovered. Only improvement in legs. Two years later, third operation; 11th and 12th D. and 1st L. arches removed. Cauda equina displaced and injured, old bone fragments removed. Slight improvement in ankle joint. Reference: Medical News, 1894, lxiv, p. 265.

CASE 185.—Operator. Roberts. 1892. Dorsal region; duration, 1 month. Paralysis of both lower limbs: rectal and vesical paralysis. Pressing fragments removed. No improvement; death. Post-mortem observations: Sepsis. Reference: Idem.

CASE 186.—Operator, Roberts. 1893. Dorsal region; duration, 5 months. Paralysis of lower limbs, bladder and rectum. Cord destroyed. No improvement. Reference: Idem.

CASE 187.—Operator, Roberts. 1892. Dorsal region; duration, 10 months. Paralysis of lower limbs. Cord destroyed. No improvement: death in 2 months. Reference: Idem.

CASE 188.—Operator, Sharples. Dorsal region; duration, 24 hours. Male, 28: injured by falling weight; instantly paralyzed below 11th D.: marked blood extravasation. Arches of 7th, 8th and 9th D. removed; cord bent; no pulsation; compressing fragments removed. Next day tingling in feet and desire to micturate; later paralysis complete, leg-jerks, anesthesia below iliac crests; no control over bladder or rectum; fistula in back. Reference: Medical News, Phila., 1894, lxiv, p. 633.

CASE 189.—Operator, Dundore, 1894. Dorsal region; duration, 5¼ months. Male, 21: injured by falling weight; loss of motion and sensation in both lower limbs; retention of urine; cystitis; slight motion and sensation after treatment with electricity. Ninth D. trephined; cord compressed, but no lacerations; drain and plaster jacket. Subsequent course: Used electricity; recovery. Reference: Med. News, Phila., 1894, lxv, p. 578.

CASE 190.—Operator, Dundore, 1894. Dorsal region; duration, 3½ months. Male, 35; struck by weight while stooping; complete loss of motion and sensation below 10th D. Cord found cut through. Death. Reference: Idem.

CASE 191.—Operator, Dundore, 1894. Dorsal region; duration, 5 days. Male, 20; total paraplegia of lower limbs. Eighth, 9th and 10th arches; cord lacerated and blood-clots found; drain used. Died 15 days later. Reference: Idem.

CASE 192.—Operator, Oliver. Dorsal region; duration, 14 months. Male, 34; fell 20 feet; instant paraplegia of lower limbs, bladder and rectum; all reflexes present. Arches of 7th, 8th and 9th D. vertebræ removed; dura adherent; no pulsation in cord; dura not stitched; perfect union. Improvement in bladder and rectal symptoms. Result: slight improvement. Reference: Med. and Surg. Reporter, 1894, lxx, p. 871.

CASE 193.—Operator, Arnison, 1894. Lumbar region; duration, 2 years. Complete paraplegia below seat of injury. Arches of 1st, 2d and 3d L. removed; cord crushed. Improvement in cystitis. Result: No improvement. Reference: Annals of Surgery, xxi, p. 522, 1895.

CASE 194.—Operator, Arnison, 1894. Lumbar region; duration, 7 weeks. Paralysis of hamstring muscles; retention of urine; incontinence of feces. Arches of 1st, 2nd and 3rd L. removed; cord crushed. No improvement. Reference: Idem.

CASE 195.—Operator, Arnison, 1894. Lumbar region; duration 1 month. Paralysis below hips, and of bladder and legs, atrophy of thighs and legs. Fragments removed. Immediate improvement, could walk in one month, cured in eight months. Reference: Annals of Surgery, xxi, p. 522.

CASE 196.—Operator. Dawbarn, 1893. Lumbar region; duration 8 months. Complete paraplegia, pain and bedsores. Cord found diminished in size. Slight increase in motion, complete control of bladder and rectum, sensation normal. Reference: Annals of Surgery, xxi, p. 46, 1895.

CASE 197.—Operator, Dawbarn. Lumbar region: duration 2 hours. Motor and sensory paraplegia below seat of injury. Fragments removed. Recovery in two months. Reference: Idem.

CASE 198.—Operator, Winnet, 1894. Cervical region. Male, 29: dived in shallow water: mind remained clear; sensation above nipples anteriorly and shoulders posteriorly; retention of urine and incontinence of feces: pupils contracted; tenderness over 4th and 5th cervical; all muscles below neck except diaphragm were paralyzed. Fourth and 5th cervical arches removed with Hey's saw and forceps. Could move arms when last heard from. Result: Slight improvement. Reference: Canadian Pract., xx, p. 1, 1895.

CASE 199.—Operator, McCosh. Cervical region; duration, 18 months. Male, 33; bedridden 9 months; paralyzed below clavicles. Fifth cervical arch removed. Good recovery. Reference: Idem.

CASE 200.—Operator, Lindsey, 1894. Dorsal region; duration, 3 months. Male, 39; struck by cable across back; unconscious; paralyzed in lower limbs; no control over bladder and rectum; bedsores, cystitis; Sayre's jacket, electricity and strychnin given. Could walk with cane after six weeks. Spines of 9th to 12th D. taken off with forceps; spicula of bone removed and dislocation reduced; no drain. Had occasional convulsions and died 5 days later. Reference: N. Y. Med. Jour., 1896, lxiii, p. 392.

CASE 201.—Operator, Wyeth, 1895. Dorsal region; duration, 11 days. Male, 27; struck by rock; instantly paralyzed below seat of injury. Incontinence of urine. Tenth to 12th dorsal arches removed; dura intact, but cord injured. Not much improvement; cystitis; regained partial control of bladder; large bedsores; severe priapism. Result: Very slight improvement. Reference: Jour. of Am. Med. Assoc., 1896, xxvi, p. 1052.

CASE 202.—Operator, Wyeth. Cervical region; duration, 4 days. Male, 19; fell on head; remained conscious; intense pain, especially on motion; complete paralysis of motion and sensation in trunk and lower limbs; right arm partially paralyzed and anesthesia of its ulnar nerve; extension made; marked rise in temperature. Fourth, 5th and 6th C. arches removed; cord almost divided by lamina of 5th C.; cord red, but no signs of hemorrhage. Died 8 days after operation. Reference: Idem.

CASE 203.—Operator, Platt. Dorsal region; duration, 11 months. Fell down stairs; 2 months later loss of sensation and motion in legs; incontinence of urine; curve appeared. On entering hospital, 10 months after, was anemic; curve, anterior posterior from 6th to 10th dorsal; whole region thickened; tenderness and edema between scapulæ; dulness below right nipple and all the way back; complete paraplegia and wasting of muscles; no control over bladder or rectum; many bedsores. Two parallel incisions from 4th to 9th D. spines just internal to trans. processes; laminæ of 5th, 6th and 7th dorsal cut; fragments removed. No motion restored; improvement in sensation and bedsores. Death 4 months after operation. Cause of death: Probably a complete transverse lesion. Reference: Boston Med. and Surg. Jour., cxii, p. 415.

CASE 204.—Operator, Myles, 1894. Cervical region; duration, 48 hours. Fall, with immediate loss of power over lower extremities; limbs warm, pulse slow and feeble, respiration shallow and rapid, pupils contracted, pain in neck increasing on movement, bladder and bowel symptoms, sensation absent, reflexes gone in left leg, present in right; next day, paralysis of both legs, all reflexes absent, right side anesthesia up to nipple, left to 8th dorsal, right arm unable to flex or extend fingers, left pronation, supination, extension and flexion gone; pupils contracted, respiration diaphragmatic, legs drawn up. Incision from occiput to 7th C.; fragments removed and 4th and 5th arches. After 24 hours began to sink, and died of dyspnea. Post-mortem observations: Arches of 4th, 5th and 6th C. fractured; also body of 3rd; cord slightly bruised in front, and no displacement of bodies of vertebra. Reference: Medical Press and Circular, London, 1894, pp. 4-7.

CASE 205.—Operator, Giles, 1894. Dorsal region: duration, 10 days. Fell on back; complete loss of sensation below umbilicus; hyperesthesia above; paralysis in legs, reflexes gone, bladder paralysis; no deformity; 8th dorsal more movable than the rest; no pain on pressure; high temperature. Compressing bone removed; dura not opened. Gradually became worse. Death 36 hours later. Post-mortem observations: Body of 8th dorsal fractured; no laceration of cord. Reference: Australian Med. Gaz., 1894, xiii, p. 86.

CASE 206.—Operator, Ridenour, 1895. Dorsal region. Struck in back by a beam. Arches 6th to 9th dorsal vertebra removed. Sensation returned at once; walked on crutches after three months. Reference: Can. Pract., 1895, xx, p. 1.

CASE 207.—Reprint from Am. Jour. Med. Sci., 1892. Dorsal region; duration, 5 hours. Fracture and dislocation between 10th and 11th D. vertebræ. Fragments removed; dislocation reduced; spines held together with silk. Improvement in symptoms; recovery. Reference: Ibid.

CASE 208.—Operator, Boyle, 1895. Dorsal region. Dislocation between 9th and 10th dorsal; also between 12th D. and 1st L. Arches from 9th dorsal to 1st L. removed. Good sensation and motion; recovery. Reference: Ibid.

CASE 209.—Operators, Church and Eisendrath. Dorsal region. Fracture and dislocation of 10th dorsal; complete paraplegia. Extradural clot removed and reduction. Improvement in symptoms; cured. Reference: Ibid.

CASE 210.—Operator, Galaudet, 1895. Dorsolumbar region: duration, 48 hours. Fracture of laminæ of pedicles of 12th dorsal and 1st L.: dislocation between 1st and 2nd lumbar. Fractured portions removed and dislocation reduced. Recovery from operation; bedsores and cystitis developed. Thirteen months later sensation returned to lower extremities, but no muscular power. Reference: Annals of Surg., vol. xxv, p. 32, 1897.

CASE 211.—Operator, Galaudet, 1896. Lumbar region; duration, 48 hours. Laminæ of 2nd and 4th L. crushed. Fractured part removed; 3rd L. intact; dura not opened; spinous processes of 10th, 11th and 12th D. vertebræ removed. Recovery from operation. Three weeks later sensation returned to lower extremities. Reference: Ibid.

CASE 212.—Operator, Galaudet, 1890. Dorsal region: duration, 5 days. Complete anesthesia of lower limbs and trunk below point of fracture. Removed laminæ of 4th, 5th and 6th dorsal vertebræ; dura opened and cord found normal. Recovery from operation. Convulsion of both upper extremities 6 hours after operation, followed by their complete paralysis. Death 10 minutes after convulsions. Post-mortem negative. Reference: Ibid.

CASE 213.—Operator, Hudson. Cervical region: duration, 3 weeks. Male, aged 19, dived into shallow water; paralyzed from neck down, except shoulders and elbows; three weeks later head held back and pupils contracted and not active to light; arms abducted and rotated out, forearms pronated, left arm partly paralyzed and sensation absent below 2nd rib in front, 2nd dorsal spine behind; breathing diaphragmatic and pulse regular and strong; large be

sore on sacrum and right shoulder; four abscesses below umbilicus, which healed on treatment; incontinence of urine and of feces at times; temperature sometimes as high as 104 degrees. Wound packed with hot sponge; 7th C. arches removed; processes with forceps, lamina of 6th C. with rongeur; no pulsation of dura; body of 5th C. almost occluded canal. Died on eighth day. Reference: Jour. of Nervous and Ment. Diseases, 1897, xxiv, p. 357.

CASE 214.—Operator, Hersey, 1895. Dorsal region; duration, 5 months. Male, aged 13; fell from tree. Depression of 4th D. crepitus; complete paralysis below injury; movement of arms also impaired; temperature 100 degrees, pulse 78, respiration 32; plaster jacket and extension used three weeks after injury and gave relief, but did not improve condition greatly; removed 15 days later; 35 days later, incontinence of urine, bedsores. Cut transverse processes of 4th, 5th and 6th D. and removed them. Spinous processes removed; deep silkworm sutures used; catgut superficially. Died 19 months after operation. Reference: Atlantic Med. Weekly vol. viii, p. 370, 1897.

CASE 215.—Operator, Godding, 1896. Dorsal region; duration, 2 weeks. Fell 60 feet; 11 days later left leg completely paralyzed; could move right foot, sensation normal; rectal and vesical paralysis; depression between dorsal and lumbar vertebræ, patella reflexes absent; temperature 99.8 degrees, pulse 92, respiration 20. Left lamina of 11th D. cut with Hey's saw and chisel; arch of 11th D. removed, dura came away with it; deep sutures of catgut, superficial ones of silkworm gut; no drain. Complete recovery. Reference: Atlantic Med. Weekly, vol. viii, 1897, p. 369.

CASE 216.—Operator, Godding, 1896. Dorsal region; duration, 48 hours. Fell 15 feet and struck across back. Extension applied; partly reduced dislocation; complete paraplegia below umbilicus; retention of urine, priapism, paralysis of rectum; spinal curve to right from 6th to 10th D. crepitus over 8th D.; reflexes absent, temperature 99.2, pulse 72, respiration 20. Cord had been cut through between 7th and 8th D.; catgut drain. Died 16 days later. Reference: Idem.

CASE 217.—Operator, Oliver, 1897. Lumbar region; duration, 35 days. Male, 36; struck by train on head and back; unconscious for a time, complete paralysis of lower limbs, rectal and vesical paralysis; constant priapism for 2 weeks; sensation normal; later, projection of left 12th D. and depression of 1st L.; turning to right caused pain; incontinence of feces, bladder control normal, knee-jerk absent. Laminæ of 1st and 2nd L. cut; pressing fragments removed. Galvanic current and tonics given; regained power of locomotion. Result: Improvement. Reference: Cincinnati Lancet-Clinic, xxxix, p. 615, 1897.

CASE 218.—Operator, Oliver, 1897. Cervical region; duration, 48 hours. Male, aged 62. Alcoholic; fell down stairs while intoxicated. Pulse slow, respiration stertorous, temperature subnormal; complete motor and sensory paralysis below 3rd rib on right side; on left side arm was involved; could flex right arm; rectal and vesical paralysis, superficial reflexes absent. Irregularity at 2nd and 3rd C.; crepitus felt; pupils contracted. Fragments from 2nd and 3rd C. removed. Bedsores appeared where there had been contusions. Died 3 weeks later. Reference: Cincinnati Lancet-Clinic, xxxix, p. 615, 1897.

CASE 219.—Operator, Frank, 1891. Sacro-coccygeal region; duration, 3 years. Male; fell 36 feet; complete paralysis of lower limbs, loss of sensation below hips, rectal and vesical paralysis; bedsores on sacrum. Coccyx and lower part of sacrum with its posterior wall removed and spinous and transverse processes of 4th and 5th L. Good recovery. Reference: Chicago Med. Record, vol. xvi, p. 143.

CASE 220.—Operator, Porter. Dorsal region; duration, 28 months. Male, 25; fell 20 feet, landed on his feet; complete paraplegia; retention and then incontinence of urine. Segments of 11th and 12th D. removed. Unimproved. Reference: Idem.

CASES 221, 222, 223, 224. For these cases see text, pp. 1248-1250.

DISCUSSION.

DR. R. H. DAWBARN, New York City—I wish to emphasize the importance of early operation in these cases and think this Section should go on record as saying so. I had a case some years ago which taught me a lesson. A young man whose spine had been broken had been treated for nearly a year before coming to me. He saw Dr. Seguin and Dr. Gray, who advised against operation. The patient then bought a large galvanic battery and used it on their advice until there was no response. He ultimately agreed to an operation, and I found the spinal cord in one spot subject to bony pressure, and hardly more than scar tissue at that point. Of course the delay had ruined his chance of ever walking again, but he greatly improved in certain symptoms. As against this I had a case five years ago, of a young girl who fell down a shaft, and I succeeded very promptly in getting an operation, which was done inside of two hours. She was paraplegic from the waist, or just below it. I found the eleventh and twelfth dorsal vertebræ crushed and sticking into the cord. My assistant suggested that perhaps one of the bodies might be fractured and attacking the cord also from its front, and sure enough such was the case. A spicule of bone about the size of a lead pencil was found sticking into the cord. I removed the lamina on that side with the rongeur, and finally reached and removed the fragment. Suddenly there was a tremendous rush of blood—evidently from the torn venæ basis vertebræ—which was controlled by a long strip of gauze curved around the spinal cord. I was afraid that this would be the means of conveying infection from air outside, but this proved not to be the case. The result was an ideal recovery, and prompt restoration of walking and all bodily functions. These cases are not in the same category as fracture of the skull. There is not more reason to delay in a case of fracture of the spine where there is hemiplegia or paraplegia and a depressed or deflected spinous process than for delay in a case of fracture of the skull with depression and pressure symptoms. There is no wisdom in waiting to see what would happen, and there is no more danger from shock in the one case than in the other. I would not wait in a case of fracture of the spine, even a needless hour, for more hopeless cases can not be found than these are. I hope this Section takes the same view that I do.

DR. G. DE N. HOUGH, New Bedford, Mass.—In 1896 I had a case of broken neck in a man who was thrown during a friendly scuffle, striking on top of his head. Paraplegia was immediate. I saw him next day. Both legs and the right arm were affected; temperature 102. He was taken to the hospital; and at 5 o'clock both legs and both arms were paralyzed; temperature 104.5 degrees; spinous process of the seventh cervical vertebra slightly deviated to the left. Laminectomy was performed and he made an uneventful recovery Soon after the operation I found that he had phthisis. He is still living and I am informed that, except for a decided weakness of the right arm, he is well.

DR. DAWBARN.—The writer and I do not differ in the least. He says that if you have a deflected spinous process you have one more indication for operation, and I agree with him. In saying that he would open the cord, he did not mean that, but the theca spinalis.

Endurance of Vegetarians.—Baelz, of Tokio, is reported in the *Deutsche Med. Woch.* as having stated, at the meeting of the Berlin Medical Society, March 20, that he has found the vegetarian Japanese actually more enduring than meat-eating foreigners in control tests, and the events in China have corroborated his experiences. In the interior of Japan it is impossible for the masses to procure even fish or much rice, and as the Japanese cows do not give milk, they have no butter nor cheese, and the food is limited to barley or buckwheat with one-quarter rice, the soya bean and no meat. The soya bean contains as much albumin as beef and 20 per cent. oil, but the amount of cellulose renders it difficult to digest. The rich Japanese who eat rice more abundantly have soft bones, owing to the lack of lime in the rice. Children who eat much rice have grooves in their bones from the bands of their clothing, although rhachitis is unknown in Japan. Among the tests of endurance he mentioned that he once drove 110 km. in fourteen ours, changing horses six times. A Japanese with a cart made the trip at the same time in 14½ hours. He had two rickisha men trot 40 km. with his weight of 80 kg. every day in the heat of the sun. At the end of fourteen days one of the men had gained .5 kg. in weight. He then added a little meat to their food, but the men said it made them feel tired, so it was suspended after three days. At the end of the twenty-second day of the test the men were as full of energy as at first.

Medical Journals as Teachers.—A correspondent of the *Wiener Klin. Rundschau* criticizes the new official post-graduate courses as superfluous in the large cities, observing that "a good medical journal takes the place of many such courses. The serumtherapy of diphtheria became the common property of the profession without any special course of training. The best teacher is always, and invariably, practice on a basis of thorough knowledge of contemporaneous achievements in science and a discussion of dubious points in professional gatherings."

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CRYOSCOPY OF THE URINE.

Cryoscopy is, in brief, the determination of the freezing point of fluids containing substances in solution. The following are the principal laws deduced by Raoult and others from the study of the freezing point of solutions: 1. All substances, solid, liquid and gaseous, when dissolved in a definite liquid capable of solidification, lower the point of solidification, and this the more the greater the concentration of the solution. 2. If the body dissolved is not combined with or altered by the water of the solution, the lowering of the freezing point is proportional to the molecular weight of the substance dissolved. 3. The solution of an equal number of molecules in a constant quantity of water lowers the freezing point to the same extent no matter what the nature of the substance dissolved may be. 4. When various substances are dissolved in the same solution, the lowering of the freezing point of the common solution is the sum of the lowering produced by each substance when dissolved singly.

On account of electrolytic dissociation of inorganic substances into ions, apparent exceptions to the second and especially the third laws are frequent. Each ion has the same significance in this case as a molecule. Thus dissociation of one molecule of NaCl into the ions Na and Cl would produce the same fall of the freezing point as the two molecules of an organic substance, because these are not dissociated. Van't Hoff's law makes this clear: Equal volumes of isotonic solutions contain the same number of molecules or fragments of molecules, and consequently they have the same freezing point.

In spite of the complexity of organic liquids the foregoing laws are directly applicable to their study, and during the past three or four years, following Koranyi of Budapesth, some work has been done on the cryoscopy of the urine and other organic liquids. The determination of the temperature of congelation is not a difficult procedure. In a recent brochure Claude and Balthazard[1] give the results of cryoscopy of the urine as applied to the diagnosis and prognosis of cardiac and renal diseases and as compared with other methods of exploration of the renal function.

The urine is regarded as the result of the filtration by the glomeruli of a pure, or nearly so, solution of chlorid of sodium, which becomes concentrated by the absorption of water as it passes down the canaliculi and is enriched at the same time with other substances from the blood by a process of molecular exchange, so that for each molecule that passes from the blood into the urine a molecule of chlorid of sodium passes from the canaliculi into the blood. This hypothesis, based largely upon a consideration of osmotic phenomena, serves as a useful guide to understanding the significance of the facts learned by cryoscopy, which permits the calculation of the total molecular diuresis for twenty-four hours and per each kilogram of body weight, and furthermore also the rate of molecular exchange by determining the amount of chlorid of sodium in the urine. The freezing points of normal urine vary between—1.3 and—2.2 degrees. After excessive libations or sudation the extremes may vary still more. By means of certain formulæ the total molecular diuresis, the diuresis of elaborated molecules, and the rate of molecular change, i. e., elimination, may be calculated and the normal standard established. Every cause that raises the arterial tension or the activity of the heart and thus accelerates the flow of blood results in an increase of molecular diuresis, but the rate of molecular exchange does not show a corresponding increase. In cardiac insufficiency and circulatory obstruction molecular diuresis falls while molecular exchange is favored if the kidney is normal. As regards the results of cryoscopy of the urine in the various forms of nephritis, the following general statements may be made: A low molecular diuresis indicates more especially glomerular impermeability, while a fall in the diuresis of elaborated molecules, i. e., elimination in the ordinary sense, points to changes in the renal epithelium, which hinder molecular exchange and prevent the elimination of detrimental substances. In uremia there is a marked diminution in the elimination of complex substances; this is also the case in chronic interstitial nephritis, and this grave prognostic omen may be detected by means of cryoscopy before the clinical symptoms lead one to suspect its existence. In the course of the disease there may be many ups and downs in the urinary condition.

In acute nephritis the interpretation of the phenomena is more difficult as the conditions vary according to the causes and the lesions. Enough work has not been done to divide the cases into groups; the clinical symptoms are often masked by the associated intoxication and infection, and cryoscopy throws a welcome light upon the condition of the renal function. In the subacute and chronic forms of nephritis, diffuse or parenchymatous, the pathological physiology is also subject to many variations, periods of insufficient elimination alternating with periods of functional activity, often exaggerated above the normal. Comparing cryoscopy with other methods of urinary examination it is notable that the chemical study of the toxic substances in the urine necessitates prolonged and delicate manipulations, which unfortunately are rarely directly applicable in clinical cases where immediate results are desired. The

1. La Cryoscopie des Urines, Paris, 1901.

authors point out that while the administration of methylene blue and the study of its elimination by the urine may throw much light upon the general condition of the renal function, cryoscopy distinguishes between glomerular insufficiency and impermeability of the epithelium of the urinary tubules.

It seems not unlikely, from what has been merely hinted at in the foregoing, that cryoscopy may clear up a number of points in the pathological physiology of the kidneys concerning which the clinician desires daily information. The condition of the renal permeability remains as the principal prognostic indicator, whatever the anatomico-clinical type of the renal lesion may be. From the standpoint of cryoscopy and pathological physiology the various forms of nephritis present marked analogies. The future must show to what extent the application of this method of physical examination may be rendered practically useful in clinical work. The work already done indicates the great value to medicine of all advances along chemico-physical lines.

HEMORRHAGIC TYPHOID FEVER.

Hemorrhagic typhoid fever does not mean cases marked by intestinal hemorrhage, ordinary epistaxis, and petechial eruption, but certain infrequent instances in which there occur multiple hemorrhages in various parts of the body, especially the skin and some mucous membranes. It is the hemorrhagic putrid fever of the early French writers. Cases have recently been described by Nicholls[1] and Hamburgher.[2] Multiple hemorrhages are rare in typhoid fever. Hamburgher states that of 1900 cases in Basel only 3 showed hemorrhagic diathesis. The case he describes is the first in the history of the Johns Hopkins Hospital. Uskow observed 4 in 439 fatal cases, representing 6513 instances of typhoid fever. In Montreal 3 cases occurred among 543 patients. The hemorrhages occur oftenest in the skin, but may take place also from mucous membranes; there may be bleeding from the gums, epistaxis, hematuria, and bleeding from the vulva. Murchison saw fatal epistaxis. In some instances the hemorrhages are almost universal, post-mortem examinations showing hemorrhages in the serous membranes, the muscles, and internal organs. There are no other special symptoms characteristic of this form of typhoid fever. Possibly furunculosis is more pronounced in hemorrhagic cases. There seems to be no definite period for the onset of the hemorrhages, which may appear early in the attack, most commonly however as the fever subsides; they may come on during a relapse, as in the case of Hamburgher.

The causes are on the whole somewhat obscure. It has been claimed that the hemorrhagic diathesis is peculiar to some epidemics, and Trousseau speaks of this under the term "medical constitution," but just wherein this alleged epidemic influence resides is wholly undetermined. The appearance of hemorrhages corresponds in some cases to secondary infections of various kinds and localizations (Nicholls). In other instances the cachectic state to which the patients are reduced seems to explain the bleeding. Gerhardt is inclined to place some blame upon the cold-water treatment and the more or less exclusively nitrogenous diet; he thinks that the condition is not unlike scurvy. Idiosyncrasy in the patient is also suggested because Wagner saw hemorrhagic typhoid in three sisters and two brothers, but the idiosyncrasy may have been in the infecting organism just as well as in the infected patients. At all events the theory that the hemorrhagic diathesis results from the action of toxins circulating in the blood seems to harmonize best with the teachings of the present time. The exact source and nature of the toxins remain hidden however, though most likely bacterial in origin. This toxemia would be "the morbid condition that constitutes putridity," as Trousseau has it.

But little is known of the pathological changes that underlie the hemorrhages. Older writers place much stress upon changes in the blood, which they refer to under the indefinite term of "dissolutio sanguinis." When venesection was in vogue there were abundant opportunities to note alterations in the appearances of the blood, which was regarded as the seat of putrid changes. Nicholls found fatty changes in the smaller vessels and the capillaries. There is need of further complete histologic studies. There are no special gross changes in these cases.

Hemorrhagic typhoid is serious, as two-thirds of the patients die (Hamburgher). The treatment is largely if not wholly symptomatic. Gerhardt stops the cold baths and adds simple vegetables and vegetable juices to the diet in order to overcome the scurvy-like condition which he thinks is present. Hamburgher and Nicholls suggest calcium chlorid in order to increase the coagulability of the blood, which should be frequently tested as recommended by Wright.

MUCOUS OR MEMBRANOUS URETERITIS.

Under certain conditions not yet perfectly understood, the secretion poured out upon the surface of mucous membranes undergoes, at times, a sort of coagulation, and as a result of this it may be discharged in irregular masses or shreds, or in the form of actual tubular casts. The disorder is most commonly encountered as occurring in the large intestine, giving rise to the symptoms of mucous or membranous colitis. The peculiar and characteristic materials discharged have been found to consist essentially of mucus, and they are considered to be the products of a secretory neurosis. They can be detached without loss of tissue, and they thus differ from diphtheritic membrane, which is an inflammatory product, with coagulation-necrosis, and which can be detached only with loss of tissue and some bleeding. Patients suffering from mucous colitis almost invariably present other evidences of a neurotic predisposition. An analogous disorder is occasionally observed involving

1. Montreal Med. Jour., 1901, xxx, 51.
2. Johns Hopkins Hospital Reports, 1900, viii, 309.

the bronchial tubes and, rarely, the ureter. A case has also been recorded in which a membranous cast of the gall-bladder and the bile-duct gave rise to attacks of biliary colic.

It may be conceived that in all of these affections the secretion of the mucous membrane is altered, both qualitatively and quantitatively, in consequence of some abnormality of innervation of local or of central origin, resulting in the formation of the peculiar mucous masses, shreds or casts. The condition is so unusual in being seated in the ureter that a case recorded recently by Dr. J. A. H. White[1] would seem worthy of special note.

The patient was a woman, 60 years old, of nervous temperament, who complained of repeated attacks of agonizing pain in the left loin, of gradually progressive intensity for twenty years. The pain was constant, though worse in paroxysms radiating from the loin down the front of the abdomen to the inner side of the left thigh. It was not increased on walking about or in riding, except during the presence of an attack. The attacks usually lasted two or three hours, were attended with sweating and vomiting and were followed by collapse. Micturition was increased in frequency, but blood had never been noted in the urine. Great tenderness was present below the left lower ribs posteriorly. Bimanual palpation of the kidney was difficult on account of great rigidity of the abdominal wall, and the kidney could not be distinctly felt to be enlarged. Tenderness and rigidity were noted also along the course of the ureter. The urine was neutral in reaction and contained a trace of albumin with a few leukocytes. That passed after an attack contained a larger amount of albumin and a few blood-cells, together with a number of semitransparent mucoid strings about an inch long and obviously derived from the ureter. Microscopically the structures last named were found to be hollow, elongated, cylindrical bodies of clear mucus, held together by a few threads of fibrin. Improvement followed the administration of an alkaline mixture containing 2 grains of potassium iodid. Reference is made to a similar case reported by von Jaksch, in which the expulsion of a renal calculus was followed by periodic attacks of colic attended with the passage of casts of the ureter 10 centimeters long. Relief was afforded by rendering the urine acid. It is thought that in this present case also an encysted renal calculus was present, which by irritation of the renal plexus caused nutritional disorder of the ureteral mucous membrane.

1. British Med. Jour., Jan. 5, 1901, p. 14.

A CASE OF AUTO-CESAREAN SECTION.

That there is some as yet undiscovered fact or that in the individual case turns the scale for or against infection would appear all too obvious from an abundance of evidence. Of several persons equally exposed, a number will surely be attacked, while another will surely escape. Such susceptibility and immunity are observed not alone in medicine proper, but in surgery as well. The most scrupulous attention to every detail will not in some instances insure against wound infection, while in others the grossest carelessness or even the total want of every precaution will fail to be attended with any undesired result. This latter peculiarity is often strikingly illustrated in the mutilations practiced by the insane, in other self-inflicted injuries and in accidental lesions. A remarkable instance of toleration of this character, bearing the stamp of authenticity, has recently been reported by Dr. Robert Löffler.[1] A woman, 42 years old, the wife of a Turkish peasant, had been bedridden for eight months on account of great weakness and pain in the lower extremities. She was at the end of pregnancy, and as she feared that she would die before the child could be born, she concluded to secure relief from her own resources. Taking an ordinary pocket-knife that she had concealed for the purpose for three days, she cut open the abdomen, and became unconscious after seeing the child extruded. When consciousness returned after a time, the woman awakened her 13-year old daughter, sleeping in the same room, and bade her sew up the abdomen. This was done with the aid of a domestic needle and waxed hemp thread. When a physician was called, after an interval of two days, it was learned further that the woman had lost about two quarts of blood, that the daughter had ligated the umbilical cord and had thrown away the placenta.

On examination, the patient was found to be greatly emaciated and anemic, with signs of old pulmonary tuberculosis. The abdomen was slightly distended, the skin of the abdominal wall flaccid and the musculature atrophic. In the linea alba was an irregular, ragged incision 16 cm. long, beginning 4 cm. above the symphysis pubis and extending three-fingers' breadth above the umbilicus, the lips of which were approximated by a continued suture and healed by primary union in spite of the fact that it had been dressed with moss and a soiled rag. The uterus was enlarged and directed to the right, but not unduly tender. On digital examination the cervix was found spongy, the external os admitting three fingers and the internal os one finger. The mucous membrane of the uterus was also spongy. From the uterus a bloody-serous odorless flow took place. So far as could be learned no attention had been given to closing the uterus. Examination of the bony pelvis was painful, as was also movement of the lower extremities. There was no noteworthy pelvic contraction. The child was 49 cm. long, and weighed 3000 grams. This case is remarkable in several respects, first of all on account of the operation itself, certainly a most desperate and heroic measure; next on account of the absence of serious hemorrhage; then by reason of the spontaneous closure of the uterus; again by reason of the absence of infection; and finally, from the recovery of both mother and child.

1. Wiener Med. Woch., 1901, No. 10, p. 472.

A SELF-CONFESSED FRAUD.

In spite of the advocacy of prominent politicians and officials another fraud has come to grief. The notorious Weltmer magnetic healing concern of Nevada, Mo., advertising over the whole United States and counting its dupes by the thousands, has been brought to confession by the Federal laws. The United States postal authorities investigated the methods of the managers and finally caused their indictment for fraudulent use of the mails. Nine separate counts were found against these men, and, notwithstanding their lawyers, they had to plead guilty and throw themselves upon the mercy of the court. It seems strange that conviction of such frauds as magnetic healers, and similar swindlers, can not be reached in state courts, but there is a satisfaction that when the United States courts are appealed to justice is obtained.

SAN FRANCISCO'S PLAGUE.

Since the report of the Government Commission there has been no denial of the existence of plague in San Francisco, but notwithstanding the fact that the Chinese quarters are being fumigated, etc., a little more positive assurance of the thoroughness of the work would be welcome. It is being done by appointees of the State Board of Health, the dominating element of which had up to the Government's investigation emphatically denied the existence of the disease. One might reasonably prefer to have the work in other hands to feel a positive assurance of its thoroughness, for no halfway measures will suffice. We are informed by our San Francisco correspondent that at present no new cases of plague are being found and that remarkably few deaths from any cause are being reported in Chinatown, which leads to a suspicion that the Chinese are at their old tricks again, hiding their sick and clandestinely interring their dead. If this is a fact the methods of the State Board of Health are not what they should be. It is true that the work is nominally under the supervision of the U. S. Marine-Hospital Bureau, but that fact alone does not, under all the circumstances, lead us to feel a full assurance that the methods and details are absolutely what is demanded. There is reason to fear, moreover, that there may be other plague foci on the Pacific Coast and attention should be given to them also. California and its state authorities owe it to themselves and to the rest of the country to give evidence of no half-heartedness in the measures they take against the Oriental pest that has existed there. It is a misfortune that their acts heretofore have not been such as to insure full confidence.

THE ANTIVIVISECTION QUESTION.

The antivivisectionists have at last been heard from in reply to Dr. Keen's cutting exposé of their unfair methods. The corresponding secretary of their Society, Mrs. Caroline Earle White, attempts a countercharge of misquotation. She says Dr. Keen misrepresents when he says that there were only two alleged instances of experimentation on the human subject mentioned in the humane society's pamphlet, whereas Dr. Wentworth admits performing forty-five experiments and Dr. Berkley admits experimenting on eight patients. What Dr. Keen referred to was charges of making such experiments, not the number of subjects employed; it made no difference whether the cases were one or five hundred so far as the point made by him was concerned. The other charge made against him is that he took advantage of a typographical error to make his case. He stated that a quotation from Tertullian was not to be found on pp. 430, 433, as averred in the pamphlet. Mrs. White says it was to be found on the second line of p. 431, and charges Dr. Keen with wilfully taking advantage of the printer's error of leaving out the dash between the figures. How could he know the omission of the hyphen was the printer's error? He simply looked up the references as given, and if the alleged typographical error had not occurred the reference would have been still ridiculously vague enough to deserve Dr. Keen's criticism. It would have been a curious way to give the reference, "pp. 430-433" for a quotation from the second line of p. 431, yet that is what it is claimed was intended to be done and Dr. Keen is charged with an "evasion of truth" because he did not find it and characterized it as vague and indefinite. The unreasonableness of the zoophile crank could hardly go much farther. These two countercharges, such as they are, are all the defense made to Dr. Keen's letter, a defense which amounts to a practical acknowledgement of the truth of his criticisms.

THE AMERICAN ARMY HOSPITAL AT PEKIN.

The *British Medical Journal's* correspondent with the China expeditionary force, furnishes, in the April 13 issue of that journal, a very complimentary notice of the American army hospital at Pekin. The first fact realized, he says, is "that medical arrangements in the United States Army possess a far higher degree of importance than our own." While he thinks, apparently, that the American soldier is a generally rather coddled employee, he says it is not till he goes to the hospital that he really finds out how his country loves him. It would not be a serious exaggeration in this correspondent's opinion to say that the American hospital in Pekin could hold its own in comparison with most London hospitals. The furnishings, cooking, attendance, and staff all come in for commendation, and one or two disadvantageous comparisons are at least implied between British and American hospital management. The hospital corps men are particularly mentioned as efficient, and it is said that five of them, lent for a special emergency to the British naval hospital at Wei-Hai-Wei, fairly astonished the surgeons there by their wonderful training and efficiency. The correspondent attributes all these excellencies he observed to the very liberal policy of the U. S. Government as regards the army medical expenses. "The *tout ensemble* of the hospital suggested that the Government had given a free hand to a man with his heart in his work; no other explanation seemed forthcoming." Outside testimony of this character is the more satisfactory since yellow journalism at home is so apt to make the most of any possible deficiencies. There has never been any doubt that the Army Medical Department would be equal to any ordinary demands if given a chance, and the con-

ditions in China may be taken as a fair index to those in the Philippines. The American soldier is as well cared for as any in the world and better than most.

THE KNEE-JERK IN CHOREA.

The diagnosis of developed chorea is not usually difficult. There are, however, occasional cases in which the symptoms are slight and doubtful and it is of some interest or importance to recognize the affection. Moreover, if chorea is an infectious disease, as is held probable by many, if not by most, neurologists, it is quite possible that our knowledge of all of its manifestations is not exhaustive. Any addition, therefore, is an advantage, especially if the symptoms noted are of diagnostic value. A peculiarity of the knee reflex in this disorder, described by W. Gordon[1] in a recent article, appears to be such a one, consisting in a retardation of the relaxation of the contracting muscles; the foot is jerked up as quickly as ever, but does not fall at once to its former position. There are varying grades of this sustained contraction, from a very slight sluggishness in the descent to almost a permanent extension of the limb. Gordon finds this symptom common though not present in every case, but he has never found it in a non-choreic and it occurs in unilateral chorea only on the affected side. This symptom has been previously noted in chorea apparently only by Risien Russell, who remarked that "in some cases the resulting contraction of the quadriceps muscle is unduly sustained"; other authorities apparently have given comparatively little study to the reflexes in this disease. It is probably well known that a somewhat similar phenomenon may be observed in some cases of organic brain disease, and also in some irritable neurasthenic states, but there the associated symptoms are different and the value of this symptom as a diagnostic sign of chorea is not affected. Gordon accounts for the symptom by assuming it to be an involuntary movement incited by the knee-jerk, due to a sort of overflow of impulse in the excitable central areas of localization. That such may occur in chorea is, he thinks, demonstrable, and he gives as an illustration the evoking or aggravation of choreic movements in the fingers of the uplifted hands by the putting out of the tongue, another delicate test of the presence of the disease. The hanging up of the knee-jerk seems to him to also point to the overflow of impulse. In whatever way we may account for it, the fact is an addition to our knowledge of the symptomatology of chorea and a possible aid to diagnosis in some less obvious cases of the disorder.

INFLUENZA AND GENERAL MORTALITY.

THE JOURNAL[2] editorially called attention to the fact that while the mortality from tuberculosis is decreasing that from pneumonia is steadily on the increase, and now, in many parts of our country at least, exceeds that from any other one cause. In the March *Bulletin,* just published, the Commissioner of Health of Chicago refers to the same facts and quotes the same figures that were in part noticed in our editorial. The point he emphasizes, however, is the "grip" epidemic that has intermittently prevailed during the past ten or eleven years, and to this he apparently refers not only the increase in pneumonia mortality but also a proportionately lesser increase in that from pulmonary tuberculosis. There is little question that the influenzal infection is largely responsible for the marked advance from 6.7 per cent. of total deaths in the 1881-1890 decade to 10.2 per cent. in that of 1891-1900. It is well that he calls attention to the fact, for if there is any epidemic scourge of the present responsible, directly or indirectly, for a greater mortality than is la grippe, it would be hard to say what it is. It is the more dangerous because it is insidious, rarely doing its evil work openly and under its own name, but through its life-sapping toxins destroying the vital resistance to the onset and morbidity of other disorders. As yet also we know too little of its natural history, and popular ignorance as to its infection enhances the danger. As Dr. Reynolds says, "influenza has apparently become domesticated with us," but we do not yet duly appreciate its baleful action as shown in the mortality statistics. Not only pneumonia, but cardiac disorders would also probably show increased mortality, and not only in this country from Canada to Mexico, but also in Great Britain and on the Continent of Europe the mortality records show its influence. It would probably be wrong to attribute the enhanced pneumonia mortality altogether to "grip" infection; Dr. Reynolds' figures show a steady increase from 3.98 per cent. in the decade between 1861-70 to nearly twice this figure before the disturbing element of la grippe intervened. Nor can we estimate this earlier gradual increase as altogether due to the higher percentage of those of advancing years in the general population; there are older communities where this factor can not be counted on, that also show an increase in the mortality from pneumonia prior to the advent of the "grip." How to meet the special dangers of this disease involves is a problem before us that we have yet to solve. The tuberculosis question is, as it at present appears, a comparatively simple one; the mortality it causes is steadily on the decrease, while that from acute pneumococcic infection, whether combined with the influenza virus or not, has passed it in the records of deaths it produces, and it may be we have not yet seen the worst.

DOES PRIMARY CARCINOMA OF BONE OCCUR?

If we take it for granted that carcinoma originates solely from cells of ectodermal or entodermal origin, then primary carcinoma can not develop in bones unless it should be from misplaced remnants of epithelial cells carried into the interior of bones either during embryonal development or as the result of pathologic or traumatic processes. Outside of the bones of the jaws, which occupy a peculiar position when looked at with this question in view, but very few primary carcinomas of bones have been described. An apparently authentic instance is the following by Carola Maier[1]: In direct sequence of a definite trauma without wound of the skin or fracture a squamous carcinoma developed in the interior of the radius. The patient had, at the time of the report, remained in perfect health after amputation

1. British Med. Jour., March 30, 1901.
2. April 14, 1900.

1. Beitr. z. Kl. Chirurgie, 1900, xxvi, 553-556.

three years previously, thus apparently excluding the possible metastatic nature of the tumor, which is regarded as springing probably from misplaced epithelial cells and as illustrating Cohnheim's theory. Fittig[2] describes an analogous case: A flat-celled carcinoma developed in the ulna in direct sequence to a definite trauma in an otherwise apparently healthy man. In this case, however, careful overhauling of the patient was rewarded with the discovery of a small ulcerating, symptomless carcinoma of the larynx, and so it became quite plain that the ulnar tumor was a metastasis. Similar cases, in which the correct diagnosis was made after the operation, if ever, are not uncommon. Helferich, Billroth, Leuzinger, Goldmann and other authors are cited by Fittig, and it is probable that the majority of the surgeons have had similar experiences. In many of the cases cited the primary tumor was apparently very insignificant because so small and free from local symptoms. The lip, the mammary gland, the thyroid, the prostate, the urinary bladder may be the seat of the primary growth. Perhaps it would be well, in view of the occurrence of osseous metastasis especially in latent tumors, to make a preliminary excision for diagnostic purposes of all bone tumors. From the foregoing it is evident that while the occurrence of primary carcinoma of bone can not be denied theoretically, yet actually it becomes exceedingly difficult to exclude the possible secondary character of osseous carcinomas. The fact that Carola Maier's patient lived at the end of three years after the removal of the tumor does not exclude a slowly growing primary but latent carcinoma in some other part.

2. Ibid., 1901, xxix, 703-712.

Medical News.

ARKANSAS.

A new board of health was organized at Hot Springs, April 11, with City Physician Henry C. Wallace as its medical member.

Arkansas University medical department, Little Rock, held its twenty-second annual commencement exercises April 12. Hon. Jacob Trieber delivered the address to the graduating class of twenty.

A graduate of the notorious "Independent Medical College," Chicago, has been arrested at Pine Bluff, charged with practicing medicine without proper credentials. In default of bond he was committeed to jail.

Medical Bill Defeated.—The bill providing for the regulation of the practice of medicine and surgery in the state, for the appointment of a state board of health, medical examiners and registration, to consist of seven members to serve for a term of four years, was defeated in the senate by a vote of 14 to 13.

CONNECTICUT.

The State Board of Medical Examiners, at its last meeting in New Haven, issued licenses, to practice to seven candidates.

Dr. **Walter K. Scofield,** U. S. Navy, whose home is in Stamford, was placed on the retired list April 28, with the rank of rear admiral.

Yale Medical School's new building is assured. An anonymous benefactor has given the corporation $100,000 for this purpose, and the contract for the building has been awarded for $96,000.

Typhoid in New Haven.—The recent epidemic of typhoid fever in New Haven, where more than 300 cases have been reported, has been traced by Dr. Frank W. Wright, the health officer, to infection with typhoid germs of one of the city's sources of drinking water. The water from the infected reservoir was immediately shut off and the supply pipes flushed with water from other sources.

GEORGIA.

Dr. James N. Carter has succeeded Dr. Jesse E. Wright as resident physician at the Macon City Hospital.

Presbyterian Hospital, Atlanta, has been granted a charter, and a location and the necessary funds are all that is required. Both of these essentials are progressing favorably, and the committee expects to be able to make a report recommending the erection or remodeling of buildings in a few days.

"Christian Scientists" Denied Charter.—Judge J. H. Lumpkin, of the superior court of Atlanta circuit, refused to grant the "Christian Scientists" a charter, April 19. This refusal was based on the law requiring all persons to be graduates of recognized medical colleges and to pass examination before the State Board of Medical Examiners before being allowed to practice medicine in the state. This decision puts this class of believers in the same class as osteopaths.

ILLINOIS.

The Kerr bill, which required all manufacturers of patent medicine to print the formulæ of their productions on the bottle or wrapper, and also to designate whether the medicines contained any harmful drugs, was defeated in the senate.

Appropriations for charitable institutions are called for by the omnibus bill, and amount to $2,640,449.90, of which all but $375,600 is for the hospitals for the insane, homes for the deaf, dumb, blind and feeble-minded, and the eye and ear infirmary.

Cuban Itch.—Despite the many-times repeated experience all over the country, some physicians still diagnose cases of smallpox as "Cuban itch." Carelessness of this kind has been followed by an epidemic of the disease at Brockton, where there are 65 cases and at Dawson and Hume in the central southern part of the state. Six cases of the disease have also been reported from Lepo, Fulton County.

Chicago.

The Illinois Epileptics' Home has received a gift of $500 from Theodore Oehne.

Dr. Ira D. Isham, who spent the fall and winter in foreign travel, returned to Chicago on April 29.

St. Luke's Hospital is a beneficiary under the will of the late Mrs. Jennie L. Young, to the extent of $5000.

Dr. and Mrs. Silas T. Yount have returned from a four-months' vacation tour to Jamaica, the Bahamas and Florida.

A midwife was found guilty of murder and sentenced to fourteen years in the penitentiary. The offense was the common one of criminal abortion, in which the patient died.

The Woman's Medical College, at the annual meeting, April 24, recommended Dr. Eliza H. Root for dean of the college during the absence of Dr. Marie J. Mergler, away on sick leave. Dr. John Ridlon was elected secretary of the faculty.

The Week's Mortality.—For the week ended April 27, the mortality was 17 per cent. lower than for the preceding week—457 deaths as against 551. Of these 151 were due to diseases of the respiratory system and 26 to violence. The death-rate equals an annual mortality of 13.55 per 1000. Reports from the laboratory show an almost total disappearance of the influenza germ, a very satisfactory condition of the water-supply and a much better quality of milk than is usual at this season of the year.

INDIANA.

Dr. Charles L. Armington, Anderson, has been appointed a member of the State Board of Medical Examiners.

Dr. Christian B. Stemen, Fort Wayne, has been appointed a trustee of Purdue University, to succeed the late General Harrison.

Garrett is to have a new hospital under the charge of Rev. Father Young. The establishment of this institution will obviate the necessity of sending injured employees of the Baltimore and Ohio Railway to Chicago for treatment.

IOWA.

Dr. Lloyd L. Krebs, Cedar Rapids, as a result of competitive examination, has been commissioned first lieutenant and assistant surgeon in the army.

Dr. Charles S. James, Centerville, has been appointed the state representative to the American Congress of Tuberculosis, to be held in New York City, May 15 to 17.

MARYLAND.

Dr. Frank H. Ruhl, Lansdowne, has been appointed sanitary officer for the Thirteenth district, Baltimore County.

Dr. Frank R. Rich, Towson, has been appointed physician of the hospital for consumptives near Baltimore, succeeding Dr. G. B. Adams.

Baltimore.

Dr. Herman Westphal, resident physician at the City Hospital for the past two years, will spend a year in study abroad.

Dr. L. Ernest Neale, at a recent meeting of a medical society here, exhibited a negro girl who had borne a child by an entirely normal labor at the age of 11 years, 8 months.

A case of leprosy was discovered last week of more than two years standing. The patient was formerly employed as a nurse, is married and has two children. The disease is of the mixed form.

The second annual banquet of the Society of the Alumni of the University of Pennsylvania in Maryland was held April 22. Drs. Thomas Opie and J. McP. Scott were elected vice-presidents, and Dr. Jos. C. Bloodgood, secretary.

The College of Physicians and Surgeons graduated sixty-one at the twenty-ninth annual commencement held April 27. Mayor Hayes delivered the address to the graduates. Charles H. Brueckner of New Jersey received the first prize.

Dr. Eugene H. Hayward, of Howard County, won the gold medal for scholarship at Baltimore Medical College, the surgical and gynecological prizes. He will become resident physician of Maryland General Hospital May 1, succeeding Dr. Duncan McCalmon, whose resignation takes effect on that date.

The appointments made by the College of Physicians and Surgeons are as follows: City Hospital: Dr. L. H. Stick, resident physician; Drs. L. T. Owen and C. W. G. Rohrer, associates; Drs. J. M. Barry, F. T. Marr, Lewis J. Rosenthal, Joseph L. Sullivan, Homer B. Jester, and Albert F. Conrey, assistants. Assistant in Pasteur Department, Dr. E. T. West. Maternité Hospital: Drs. S. T. Lowry and W. B. Graves, residents. Bayview Asylum, Drs. W. B. T. Smith and J. A. Campbell, assistants.

The University of Maryland's school of medicine, graduated a class of seventy May 1. Rev. W. A. Fletcher made the address. Gold medals were awarded to George W. Hemmeter and Nathan Winslow. The appointments to the University Hospital are as follows: Superintendent, Dr. George H. Stewart; assistant superintendent, Dr. A. A. Matthews; assistant resident surgeons, Drs. W. F. Hargrove, W. H. Smith, and W. R. Rogers; assistant resident physicians, Drs. J. M. B. West and G. W. Hemmeter; assistant gynecologists, Drs. H. A. Naylor and Nathan Winslow; pathologist, Dr. W. E. Kornegay; resident physicians at the Maternité, Drs. B. H. Dorsey, W. S. Rankin and R. P. Carman, assistant resident physicians at Bayview asylum, Drs. C. H. Lewis and E. D. Weems.

MASSACHUSETTS.

Dr. Joseph Proctor, late city physician of Malden, has been appointed a state medical inspector of the State Board of Charity.

The anti-spitting ordinance at Worcester has been enforced for the first time, and a fine of $5 imposed on a violator who pleaded guilty.

Dr. George E. Winslow, U.S.N., who has been medical director of the Charlestown Navy Yard for 2½ years has been placed on waiting orders.

Dr. Augustus P. Clarke, Cambridge, has resigned as dean and professor of gynecology and abdominal surgery in the College of Physicians and Surgeons, Boston.

MICHIGAN.

State Sanatorium for Nervous Diseases.—A bill has been introduced in the legislature providing for an appropriation of $200,000 to establish a state sanatorium for nervous diseases. The object of this sanatorium is to provide an intermediate place between the home and the insane asylum, and thus to prevent an increase of insanity.

Michigan's Smallpox.—During the ten years, 1890-99, there occurred in Michigan 710 cases of smallpox, with 134 deaths, or about 19 per cent. During the single year 1900 there occurred 608 cases with 8 deaths, or a little over 1 per cent. At the close of the first quarter of 1901, final reports have been received of 77 outbreaks, showing that 500 cases occurred, including 7 deaths, a little less than 1.5 per cent.

Delinquent Health Officers.—Of the 1600 local boards of health, 206 health officers in 67 counties have failed to make to the State Board of Health their annual report for the year 1900. They have been three times asked to comply with the law, and the executive officer of the board has put the subject in the hands of the prosecuting attorneys in the 67 counties, asking that they see to it that the law is complied with and the annual reports of the health officers now delinquent are forthcoming.

MINNESOTA.

Dr. Charles D. Sidle has been appointed resident physician of the Stillwater City Hospital.

The State Board of Medical Examiners, at its April meeting, elected Dr. Pierre A. Hilbert, Melrose, president, and Dr. Carl J. Ringwell, Minneapolis, secretary. Licenses to practice were also granted to ninety applicants.

Smallpox Under Control.—The State Board of Health reports that smallpox is now well under control. The total number of cases for March was 689, of which eighty-one were reported from the range and lumbering districts.

State Sanitarium.—The senate passed the Daugherty bill April 4. It provides for an appropriation of $1000, and a commission of three to be appointed by the governor to select a site for a state sanitarium for consumptives, in the northern pine woods.

MISSOURI.

Dr. Herbert A. Logan, police surgeon of Kansas City, has appointed Drs. J. S. Snider and Charles L. Bell assistant surgeons.

Centenary Hospital. St. Louis, which is to adjoin Barnes Medical College, is to be a six-story structure 60 by 126 feet. It is to be non-sectarian and a private enterprise. Drs. Pinckney French and Alonzo R. Kieffer are members of the board of directors.

NEBRASKA.

Dr. B. F. West, Tecumseh, was recently afflicted with a stroke of paralysis and is now confined to his bed, with the probability that his recovery will be slow.

Omaha Medical College graduated a class of twenty-three on April 24. Dr. E. Benjamin Andrews, chancellor of the University of Nebraska, delivered the doctorate address, on "Medicine and Morals."

Dr. J. Cameron Anderson, Omaha, surgeon-general of the state, has resigned that position and the chair of surgery in the Omaha Medical College, as well as his hospital appointments, and is about to move to New York City.

The Omaha Medical Alumni Association, at its meeting April 25, elected Dr. Willis W. Dean, Sioux City, president; Drs. George R. Gilbert and Henry A. Reichenbach, Omaha, vice-presidents; Dr. George Moqridge, Glenwood, Iowa, secretary, and Dr. Mary L. Tinley, Council Bluffs, treasurer.

NEW YORK.

The Albany Hospital acknowledges receipt of donations aggregating $4506.25.

Dr. and Mrs. Theodore D. Miles, Middletown, and Dr. and Mrs. John T. Howell, Newburgh, sailed for the Mediterranean, April 13, on the *Hohenzollern*.

Dr. George Blumer, of the Bender Laboratory, of Albany, has been appointed director of the Bureau of Bacteriology and Pathology which is a new deartment.

A bill has been passed authorizing payment to the Pasteur Institute of New York for services in caring for poor persons in danger of infection with rabies.

Smallpox at Cohoes.—The State Board of Health reports twelve cases of smallpox at Cohoes, in the vicinity of the Harmony mills. The patients include children and adults. The disease was spread by a man who was taken ill about six weeks ago.

Craig Colony for Epileptics.—The legislature just adjourned passed a special appropriation bill which has been signed by Governor Odell, giving the colony $137,050. The chief item in the bill is one of $90,000 for additional cottages for patients. There are now twenty-eight cottages and buildings at the colony, occupied by 700 patients, and the new appropriation will provide for eight or ten additional cottages and

increase the epileptic population to 1000. An appropriation of $125,000 was also given for maintenance, beginning Oct. 1, 1901.

Buffalo.

Drs. Frederick **Zingsheim** and Paul O. Luedeke have been appointed medical internes in the German Hospital.

Drs. Tripp **and Leonard,** of the class of 1901, University of Buffalo, have been appointed resident physicians to the Buffalo General Hospital.

The **commencement exercises** of the medical department of the University of Buffalo were held April 26. There were forty-five members in the graduating class. Dr. W. E. Ford, Utica, delivered the address to the graduates.

The German **Hospital Dispensary** has elected the following new members: Drs. Thomas Phillips, Frederick Milliner, Julian Riester, Abram Weil, Louis Beyers, Charles Mengis, Frederick Koehler, J. Leidler and A. Schweigert.

Charity Hospital Patients.—All of the Buffalo hospitals have combined in an effort to have the city increase the per capita maintenance of charity cases taken into the hospitals from $4 to $6 a week. The cost of maintenance averages over $9 per capita.

New York City.

The German **Hospital** has received a bequest of $1000 from the late Colonel Henry Roehr.

Seven new **cases** of smallpox have been reported in the New York Foundling Hospital. The City Lodging House in First Avenue and Twenty-third Street was recently visited at 2 a. m. by two of the physicians of the health department, and the 493 inmates vaccinated.

Health Board Statistics.—For the week ending April 13 there was a decided decrease in contagious diseases. During the week ending April 6 there were 1620 cases. The greatest decrease was in scarlet fever, which dropped from 725 to 619 cases for the week ending April 13. Smallpox, however, increased two cases, the total being 44.

Bequests to Hospitals.—Joel Goldenberg has left the following bequests to hospitals: To the Mount Sinai Training School for Nurses, $5000; to the Montefiore Home, $4000; to the Mount Sinai Hospital, $3000; to the Presbyterian Hospital, $2000. The entire residuary estate is bequeathed to Mount Sinai Hospital for establising and maintaining a special ward in the hospital, to be known as the "Joel Goldenberg Ward," and to be under the charge of his nephew, Dr. Herman Goldenberg.

A New East Side Hospital.—The Austro-Hungarian Hospital Association, after May 1, will begin to remodel the building now known as the East-side Dispensary. It is in future to be named the Austro-Hungarian Hospital and East-Side Dispensary. The capacity is to be from thirty to thirty-five beds. The money to change the buildings into a hospital has been given by members of the association and others in the colony. The Hungarian miners in Pennsylvania, many of whom are sent here for treatment, have also contributed. About $10,000 has been already raised.

Ambulance Surgeon's Mistake.—An ambulance surgeon of the New York Hospital has been severely criticised for wrongly diagnosing a case of apoplexy, occurring in a respectable and well-dressed woman, as a "plain drunk." The policeman who saw the woman fall in the street urged the surgeon to take her to the hospital, suggesting that she appeared to have some other trouble, but the ambulance surgeon refused. She was accordingly taken in a police patrol to the police station. There the matron insisted that the woman was dangerously ill, and the surgeon was again summoned. Even then it was with difficulty that he was persuaded to take her to the hospital. It was admitted at the hospital that her death there the following evening was caused by apoplexy, nevertheless the case was reported to the coroner's office as one of death from being run over in the street.

OHIO.

D. V. **Burkett,** a senior student at Ohio Medical University, has been appointed assistant editor and business manager of the *Columbus Medical Journal.*

Dr. Samuel **E. Newman,** Cincinnati, has started for Vienna, where he will study for six months, returning in December for his interneship in the City Hospital.

The State **Board of Medical Registration and Examination** met at Columbus, April 18, and admitted 103 physicians to practice, without examination, under the provisions of the Dove law.

Toledo Medical College held its twenty-first annual commencement exercises April 25. A class of eight was graduated, one of whom—D. W. Iford—was immediately commissioned captain and assistant surgeon, O. N. G. The address to the class was made by Rev. Campbell Coyle.

PENNSYLVANIA.

Dr. Alexander A. E. McCandless, Pittsburg, has assumed charge as medical director of the Department of Public Safety.

Allentown Hospital has been given $35,000 for the purpose of adding an additional wing to the hospital, for the treatment of surgical cases. The name of the donor has been withheld.

"Christian Science" Treatment.—Willard Schellheimer, aged 26 years, of Sharon, a few days ago met with a railroad accident and was taken to the State Hospital at Mercer for treatment. Both he and his wife, it is claimed, were "Christion Scientists," and the wife insisted on his removal to his home. No regular physician was called in until two hours before his death. It is now claimed by the hospital physicians that death was hastened by his removal, while he was in such a critical condition, and an investigation will likely be held.

Philadelphia.

A eulogy of the late Dr. Richard J. Dunglison, who was president of the Musical Fund Society for thirty-one years, has been adopted by members of that association.

Whooping-Cough a Contagious Disease.—At a recent meeting of the Hygiene Committee of the Board of Education it was decided to add whooping-cough to the list of contagious diseases, this being a cause for exclusion from the public schools.

Dr. Aloysius O. J. Kelly, instructor in clinical medicine in the University of Pennsylvania, recently was elected professor of the theory and practice of medicine in the University of Vermont. He leaves Philadelphia shortly for Burlington to begin his professorial duties, but will return to Philadelphia in the early fall.

Marine Hospital.—Plans have been accepted for the erection of a new building and for remodeling the U. S. Marine-Hospital Service office adjoining the Custom House. The new building will be thoroughly equipped with all improvements for a dispensary, waiting-rooms, examination-rooms, for seamen of American vessels. The officer in command will be Dr. H. W. Austin, who is now in charge, and who devised the plans for the new building.

Books as Contagion Carriers.—In reference to the statement that contagious diseases may be communicated to persons reading the books at one of the free libraries of this city it has been stated that since the incorporation of the library in 1891 there have been about 10,500,000 books received and handled over and over again by the employees of this institution, and not a single one has contracted a contagious disease. Since March 15 there have been 492 cases of contagious diseases reported to the library, 13 in visitors to the library. Seven books were found in infected houses, and these were promptly destroyed.

Philadelphia Polyclinic.—At a special meeting of the board of trustees, held April 22, the resignation of Dr. Ralph W. Seiss as professor of diseases of the ear was accepted. Dr. Francis R. Packard is to be his successor. The trustees also elected Dr. B. M. Randolph, Richmond, Va., as dean of the college and director of the laboratories, to succeed Dr. T. S. Kirkbridge, recently deceased. At present Dr. Randolph is in charge of the Department of Pathology at the Richmond Medical College. He will assume his duties at the Polyclinic after a course of study in Europe.

Removal of Insane Hospital.—The medical faculty of the University of Pennsylvania and others have appeared before Councils for the purpose of urging the speedy removal of the almshouse and insane department of the Philadelphia Hospital (Blockley) to a more suitable location. As it is now arranged, the insane department and the almshouse militates against the institution as a source of great benefit to the thousands of medical students who annually come to Philadelphia. It is now believed that both these departments will be removed to a place near the house of correction, at Holmesburg Junction. Mayor Ashbridge has already signified his willingness to comply with the wishes of those who have asked for the removal of these departments. The sum of $200,000 has been made available for the erection of these new buildings, through the action of Councils.

CANADA.

The present smallpox outbreak in Toronto has cost the city $1400 up to April 27.

Dr. George A. Peters has been given command of the new corps of mounted infantry, now being raised in Toronto. He will have the rank of major.

Dr. Patterson, Winnipeg, under instructions from the Dominion government, is visiting the northern Indian reserves in the territories, to inquire into the reported outbreak of smallpox.

Dr. George Stirling Ryerson, Toronto, has been created a Knight of Grace of the Order of St. John of Jerusalem, for services in South Africa. Mr. Frederick Treves and Mr. A. D. Fripp received similar honors at the same time.

Appointment Asked.—The National Council of Women is asking the state department of the Ontario government, in selecting the staff for the new Coburg asylum for female patients, to appoint a woman physician to the post of assistant medical superintendent.

The suit brought against the College of Physicians and Surgeons of Quebec, by some six applicants to practise medicine in that province, has been decided in favor of the appellants. The college was ordered to grant the licenses and pay $100 damages with costs in each case. An appeal has been entered.

Yellow Fever on Shipboard.—On April 19, H. M. S. *Condor* arrived at the Williamshead Quarantine Station, B. C., flying the yellow flag at her mast head. The vessel sailed from Acapulco on April 9. The exact number of cases of yellow fever among her crew has not yet been ascertained, but the vessel is still in quarantine and will be thoroughly disinfected.

To Test for Tuberculosis.—As a result of negotiations between U. S. Secretary of Agriculture Wilson and the Canadian Minister of Agriculture, an agreement has been reached between the two administrations by which Canada is to have a first-class veterinarian stationed in England to test, for tuberculosis, all British cattle shipped to the United States via Canada.

Services Appreciated.—At the recent meeting of the Canadian branch of the Red Cross Association a resolution of thanks was passed to Dr. Ryerson for work in South Africa, and $500 voted toward defraying his expenses. Letters were read from Lord Roberts and Surgeon-General W. D. Wilson, principal medical officer of the army in South Africa, commending Dr. Ryerson very highly for his valuable services.

Attempt to Annul Degree.—The College of Physicians and Surgeons of Quebec seeks to stop a party practising medicine in that province. It is alleged that at the examination of July, 1898, this man, a student, failed in his written examination. When the successful candidates were called to present themselves for their licenses, he went with them, gave his name, secured his title and walked out as an M.D., and he has been practising medicine ever since. The court took the matter *en delibre.*

Physician Dies from Smallpox.—The value of vaccination has just been brought home to the Toronto profession and the laity generally. Dr. Thomas H. Little, of Toronto, was called about ten days ago to attend a young man recently arrived from Cleveland, Ohio. The Doctor treated his patient, but unfortunately not for smallpox. He contracted the disease himself and a week after died from confluent hemorrhagic smallpox. He had never been vaccinated. All the other patients infected from the first case had the disease in a mild form. Dr. Little was 40 years of age and had been practicing in Toronto twelve years. He was a graduate of the Toronto School of Medicine.

Health Precautions.—Dr. Montizambert, director of public health at Ottawa, is having a strict watch kept in order to guard against the introduction of bubonic plague as well as the spread of smallpox in Canada. At the Pacific Coast all Orientals must undergo a bath at quarantine. With regard to smallpox, forty officers have been detailed for service along the western boundary line between the United States and Canada. A circular has been issued by the Dominion customs to collectors and subcollectors at seaports and inland water ports authorizing them to make careful enquiries into the possible presence of smallpox, and if necessary to call in the services of a medical man to inspect suspected persons.

Toronto Branch, Victorian Order of Nurses.—The annual meeting of this branch of the Victorian Order of Nurses was held in Toronto on April 27, Lady Minto having come up from Ottawa to deliver an address. Her Excellency, speaking of the good work the order was doing in Canada, told of recent encouragement for her cottage hospital scheme for the northwest territories. The Dominion government has promised a grant of $6000. Sir William Macdonald will supplement this with $3000, and there are other contributions of $4000. The report of the superintendent shows that during the past year the local branch treated 249 patients, to whom 4323 visits were made. Thirty-eight Toronto physicians have been added to the list of those employing these nurses throughout the city. The fees for the year amounted to $472. During the past three months the nurses have made 1142 visits and had 95 new patients. Fourteen new physicians have been added in that time, and $152 collected in fees. Dr. James Thorburn presided, and a number of medical men attended the meeting and spoke of the good work the Order was doing in Toronto.

Smallpox in Ontario.—The past week might truly be called "smallpox" week so much has the disease been discussed throughout the province of Ontario during that time. The quarterly meeting of the provincial board of health was held at the secretary's office—Dr. P. H. Bryce—and nothing but smallpox discussed. The disease has broken out among the Mohawk Indians on the reserve on the Grand River, at the city of Brantford, Ont., and the braves are being subjected to a rigid quarantine. The present outbreak in the province is the worst in twenty years, as regards the number of municipalities affected. Several doctors in New Ontario had obstructed the work of the provincial board and the secretary has called on the medical council of the province to discipline these members of the profession who persist in calling the outbreak "chicken-pox." An important resolution was adopted by the board that all the unorganized settlements along the lines of communication by railway and water be required to appoint and pay sanitary inspectors. The compulsory vaccination of all employees of lumber and mining camps was also insisted on. Although the disease is so widespread, only two or three deaths have been recorded. Dr. Little's death being the first that has occurred in Toronto since 1888.

FOREIGN.

Glasgow's Smallpox admissions for the week ending April 14 were 33 and the patients under treatment 190.

Dr. Metchinkoff, of the Pasteur Institute, Paris, has been awarded the Wilde gold medal, by the Manchester (Eng.) Literary and Philosophical Society.

Bizzozero's Death.—The eminent Italian pathologist, Giulio Bizzozero, died April 8, in his fifty-sixth year. His friends say that every discovery, every achievement in histology or biologic research in Italy of late years is directly due to his untiring, fostering care of the infant science of histology and the enthusiasm he inspired in his associates and students.

Italian Institute for Scientific Research.—Professor E. Maragliano announces that he has founded and opened an institute for the study and cure of tuberculosis and other infectious diseases, modeled on the Pasteur Institute of Paris. Opportunities are offered physicians for special research and the production of serums, etc., and infectious diseases are cared for free of charge.

Progress of the Plague.—At Capetown, S. A., for the week ending April 6, the records are: Cases admitted: Europeans, 20; colored, 22; Malay, 4; Indian, 3; natives, 13; total, 62. Deaths: Europeans, 3; colored, 17; Malays, 3; Indians, 3; natives, 5; total, 31. On April 16 7 new cases of plague were recorded, including 3 in Europeans and 4 persons found dead, 1 of the latter being a European. The matron of the plague hospital has succumbed to a severe attack. A native case has been discovered in Port Elizabeth. For the week ending April 13, 43 cases and 23 deaths were reported—a considerable diminution as compared with the two preceding weeks. An unsatisfactory feature is that dead bodies are discovered from time to time, showing that the people are witholding information. The total number of cases up to April 13 was 392, of which 152 were fatal. The disease is confined to the Cape Peninsula, with the exception of a few cases imported therefrom into adjacent districts. In India, for the week ending March 23, no fewer than 11,560 deaths from plague occurred, an increase of 2731 over the previous week. In Bombay City, during the week ending March 23, there were 1092 deaths, a diminution of 111 over the previous week. In Calcutta there were 1040 deaths, an increase of 221 over the previous week. Calcutta has never suffered so seriously before and is almost in the same plight as Bombay. But in spite of the magnitude of the epidemic there is no sign of panic as there was three years ago, when the people ran away from the epidemic. In Australia, from Queensland, a case is reported at Pinkenba, at the mouth of the Brisbane River. In West Australia plague exists in a more or less sporadic form.

LONDON LETTER.

British Vital Statistics.

The registrar-general's annual report for 1899 has just been issued. The marriage rate shows a further increase. It was 16.5 per 1000, the highest since 1876, and 1.1 above the mean rate for the ten years, 1889-98. On the other hand the birth rate was 29.3 per 1000, .01 per 1000 below that of the previous year, which had been the lowest on record, and 1 below the mean rate of the ten years, 1889-98. More boys than girls were born, in proportion of 1039 to 1000. The death rate was 18.3 per 1000, against an average of 18.4 in the preceding ten years. The total number of deaths was 581,799, of which 89,235 were attributed to zymotic diseases, 174 to smallpox, 9998 to measles, 3722 to scarlet fever, 6304 to typhoid, 9295 to diphtheria, 10,129 to whooping-cough, 12,417 to influenza, 30,971 to diarrheal disease, 26,325 to cancer, 42,408 to consumption and 18,665 to violence. The deaths of 2121 men and 723 women were attributed to suicide; 143 males and 148 females were victims of homicide. The death-rate from cancer was the highest on record, 829 per million living of the population, in males 672, in females 977.

Lateral Sinus Pyemia and Cerebellar Abscess: Cheyne-Stokes Respiration: Cessation of Respiration Under Anesthesia: Recovery After Two Operations.

At the Medical Society of London, Mr. H. F. Waterhouse recently described this interesting case: A dental surgeon was admitted to hospital April 17, 1899, with lateral sinus pyemia. For the greater part of his life he had suffered from double otorrhea, and for many years from tuberculous abscesses near the right hip. In 1895 he was operated on for a large right supramastoid abscess, and shortly before admission two abscesses of the right hip had been opened. On April 11 he fell ill; the temperature was 100. On the 12th he had a rigor, on the 13th another of half an hour duration and a temperature of 103 F. On the 15th a consultation was held and lateral sinus septic thrombosis was diagnosed, but on which side could not be decided. The temperature was 104.2 F. There were no pupillary changes and no optic neuritis. From this time to April 28 there were repeated rigors and the highest temperature was 105.2 F. A systolic murmur developed after continuous pain over the base of the heart, and there was cough with sputa of the color of prune juice. The condition became profoundly toxemic and apparently hopeless. Much valuable time was lost in waiting to determine upon which side the sinus was affected. At last, on April 28, as the time for interference was passing away, the left lateral sinus was opened and the internal jugular vein divided between two ligatures. A septic thrombus was cleared out of the former. Recovery took place, but on May 1 streptococci were found in the blood. On June 8 there were headache and vomiting and the pulse fell to 56. Drowsiness increased and on June 10 the patient was comatose and there were double optic neuritis, Cheyne-Stokes respiration and a pulse of 50. It was then decided to explore the temporosphenoidal lobe and cerebellar fossa on the left side. Unfortunately the former was first attempted with negative result. Respiration ceased entirely under even partial anesthesia. Artificial respiration was performed. The pulse became imperceptible. As the patient was obviously near death, the exploring syringe was made to perforate the tentorium cerebelli from above. An ounce of fetid pus was obtained and the respiration and pulse recovered at once. The left cerebellar fossa was now rapidly trephined and several drams of pus evacuated. Progress henceforth was satisfactory, although there were for many days word-deafness from injury of the temporosphenoidal convolutions. The patient is now in better health than before his illness and is in practice as a dental surgeon.

PARIS LETTER.

Treatment of Syphilis.

Dr. Brocq, physician at the Broca Hospital, who is considered the most thorough skin specialist in France, recently wrote an essay on the treatment of syphilis by mercury, the following being a synopsis: It has always been an important principle in therapeutics that to act with efficacy drugs must be in a state of dissolution. Since 1888 Dr. Brocq has applied this principle to the use of mercurials administered by the mouth, and he has always preferred using Van Swieten's solution or biniodid in an aqueous solution or as a syrup. He has sometimes given mercury in massive doses, for instance every morning before the first breakfast, or else half the daily dose before the two principal meals of the day. But he has generally preferred giving it in small doses, for instance four to six times a day. After a first period, during which subcutaneous injections were discussed, they have at last come into current use. On the other hand, the method of mercurial frictions has been extended, regulated and made more precise. It would seem that the treatment by gastric absorption had been more or less discredited. It is quite true that this latter means of administering the drug presents serious defects, especially when it is given in the form of pills, as the absorption takes place much less readily in such cases, and the active principle has sometimes an injurious action on the mucous membrane of the intestine. Dr. Brocq admits that this plan of treatment offers certain disadvantages. There is to be taken into consideration the irritating effect produced on the stomach and intestines by the use of pills. When given in the form of a dilution, this is much less to be feared, and, according to Dr. Brocq, milk or Vichy water should be used as a means of administering the drug. When mercury is given in small doses he rarely had occasion to notice any unfavorable symptoms, the digestive functions being sometimes ameliorated. Whenever there is any colic or diarrhea, Dr. Brocq uses paregoric, which he has found most beneficial in such cases. As for the distaste shown by some patients, it is found with very few of those who suffer from intense forms of syphilis, and the preparation can in such cases be flavored to suit the patient's taste. There is a last argument against the use of this solution: it is the bother caused to the patient by having to take his medicine in public. Dr. Hallopeau, of the St. Louis Hospital, has recommended the use of little pellets, which can be allowed to dissolve in the patient's mouth, or else a graduated bottle may be employed, so that the patient may easily determine how much of the solution he should pour out.

The advantages of this method are numerous, according to Dr. Brocq: exact determination of the quantity given, very slight irritation produced, and efficacy of relatively smaller doses of the drug. Dr. Brocq has found that this method produced excellent results in all cases of syphilis, with the exception of certain psoriasiform syphilids of the palms of the hands and the soles of the feet, and in such cases injections of calomel had better be used immediately. Dr. Brocq has been applying this method for the last 3½ years at the Broca Hospital, where he has charge of one of the large venereal services of Paris, and he has treated some 2000 patients with Van Swieten's solution, obtaining a good result in such cases. His article concludes as follows: "It is best not to suppress the gastric method in the treatment of syphilis; just as much as other methods, it has its indications, advantages and usefulness. It is of undoubted advantage in a physician's city practice, where the patient can not afford the expense of subcutaneous injections, but to be efficacious, mercury should not be given in the form of pills, but in a solution and in small doses."

Correspondence.

Implantation of the Ureters.—A Reply.

CHICAGO, April 29, 1901.

To the Editor:—It gives me great pleasure to be afforded an opportunity of replying to Dr. Fowler's criticism (see last week's JOURNAL) of certain conclusions appearing in my article on "Ureteral Anastomosis" recently published in THE JOURNAL (Feb. 16-March 23).

The particular conclusion objected to is the third among the General Conclusions, and reads as follows: "All efforts to prevent ascending renal infection in animals or man, where the ureter has been implanted (into the intestine) without its vesical orifice have proved futile."

In order to show this conclusion false, Dr. Fowler points to his case of uretero-rectal implantation, where the patient has survived bilateral uretero-rectal implantation by the Fowler method 4½ years and is to-day *apparently* in perfect health.

What grounds have I for assuming that this patient's kidneys, as a result of the operative procedure, have been infected, "but that the infection has been overcome with resulting contracted kidneys?" 1. One or both ureters, minus the vesical orifices, have been implanted into the bowel in a comparatively large number of animals, yet *in every* instance where accurate postmortem findings have been given the kidneys were shown to be infected, or to have recovered from an ascending infection.

2. After a most careful search through the literature I have been unable to find a single case of ureteral implantation in the human being which did not correspond in its results with similar experiments made upon animals. The post-mortem findings show infection in every case.

3. In February, 1899, I implanted both ureters into the bowel of a dog, using practically the same method employed by Dr. Fowler in his case, except no mucous valve was made (THE JOURNAL, March 16, p. 738). The dog remained in perfect health for over a year and probably would have been living yet if she had not been killed for the purposes of my article. In this case of bilateral implantation of the ureters there were no more signs of kidney infection than in Dr. Fowler's case, yet the postmortem examination showed healed pyelonephritic lesions in the form of contracted kidneys. Whenever the other animals experimented upon lived long enough to overcome the primary renal infection connective tissue changes ensued. Why then is it not reasonable and far from being either "gratuitous" or "unwarranted" to assume that the same changes resulted in the kidneys of the boy operated on by Dr. Fowler?

4. It is certainly fair to assume that the danger of ascending infection after implantation of the ureters into the bowel was considered by Dr. Fowler to be particularly great, since he concludes his article by setting forth certain advantages to be derived from his operation as follows: "1. An efficient permanent valve with a mucous surface applied to the mouths of the ureters, is provided. This valve is so situated that it is closely applied to occlude the open ends of the ureters as the rectum becomes filled with urine or when the fecal matter descends from above. 2. Placing the ureters in the submucous space of the rectal wall for a distance of three or more centimeters above the point where these enter the cavity of the rectum affords an additional safeguard against renal infection. In this situation the circular muscular fibers of the bowel wall compress the ureters and secure occlusion at this point during the act of defecation."

Now my experiment upon the dog, where the Fowler technique was employed, showed that the mucous valve and that portion of the ureter projecting into the bowel soon sloughs away, hence can have no effect in preventing ascending infection.

A study of my other experiments will show that the ureters were buried underneath the muscular coat of the bowel as advised by Dr. Fowler, yet kidney infection resulted in every case. It is a beautiful theory to assume that the circular bowel muscles will act upon the ureters and prevent ascending infection, but like so many theories it is not substantiated by facts. So another "important feature" of the operation in question must be considered worthless as a preventive of infection.

5. It is hardly just for Dr. Fowler to make use of italics in calling attention to the fact that no bacteriologic nor microscopic report was made on the mucous valve specimen. The gross specimen differed in no way from many others which I reported in my paper at great length. It clearly showed pyelonephritis, and as my chief object in performing the experiment was to ascertain the fate of the mucous valve within the gut cavity, I did not think it necessary to ask the pathologist to repeat his work on this specimen.

I would also call Dr. Fowler's attention to the fact that I am not even guilty of the inaccuracy ascribed to me in his letter when he says his case "is still living and enjoying the best of health at the end of 4½ years—not 3½ years as stated by Dr. Peterson." At the time my paper was written and Dr. Fowler was kind enough to report upon the condition of his patient, 3½ years had elapsed since the operation. I can only congratulate the doctor that the boy has been able to add another year to the score.

6. Among the cases of bilateral uretero-intestinal implantation given in abstract in my article is one by my friend, Dr. Carl Beck, of Chicago. Dr. Beck also devised an operation whereby ascending renal infection could be prevented. The patient on whom he operated survived for some months and was shown before the medical societies as free from infection after ureteral implantation. I challenged this statement in open society, and the autopsy some months later showed marked renal infection.

In conclusion, when I am shown either in animals, or man, a kidney free from infection, where the severed ureter has been implanted in the bowel, then and then only will I feel justified in thinking that Dr. Fowler's case has proved the exception to the universal rule and escaped infection.

REUBEN PETERSON, M.D.

Immunity Against Zymotic Diseases.

CHICAGO, April 28, 1901.

To the Editor:—In THE JOURNAL of April 27 there appeared a letter by Dr. Corban E. Judd, relating to an article recently published by me in which I had formulated a theory in regard to acquired immunity. Dr. Judd states that Dr. O. P. Davis, of Topeka, Kan., had presented a paper before the Medical Science Club of Topeka, on Feb. 18, 1901, which, to use Dr. Judd's words, "embraced all that Dr. Class sets forth and more." As my paper was published April 13, 1901, a claim for priority is made in favor of Dr. Davis. Priority squabbles are usually not very edifying, and in this case of no particular moment; still, I would like to state my position. Dr. Judd states that Dr. Davis's theory embraced all that I set forth and more. Dr. Davis, by saying "more," made his theory different from mine inasmuch as he says that during the time that immunity continues the attenuated germs continue to reside in the protected body. This statement shows that his theory is not identical with the one formulated by me as I state that the immunity is due to the presence of the antitoxin without saying anything about a continued presence of the micro-organisms. In fact, I think the continued presence of a large variety of pathogenic organisms in the human body would not be borne out by research and is illogical. Even if the two theories were identical the question of priority would not be open for discussion as my paper was written during September, 1900, and was on the program of the Chicago Pathological Society for the meeting held Oct. 18, 1900. Circumstances prevented me from reading it at the time. Shortly afterward I sent it to the publishers in whose hands it was for a long time before Dr. Davis read his paper. If Dr. Judd wishes to investigate the matter further I will be pleased to send him the exact data. As it is I do not lay claim to any special originality in the matter, as the fundamental fact upon which the theory rests was illustrated very forcibly when vaccination came into vogue. However, I tried in my theory to show its application to a wide class of diseases and to elucidate this applicability. I believe similar views have been held by others before, but like the venerable egg trick of Columbus, they needed a practical demonstration. Respectfully,

W. J. CLASS, M.D.

Lavage of Stomach in Constipation.

PITTSBURG, PA., April 27, 1901.

To the Editor:—In Dr. Spivak's paper on "Lavage of the Stomach as a Therapeutic Agent in the Treatment of Habitual Constipation" (THE JOURNAL, April 13.), among other things he says: "The fifth indication, habitual constipation, of which I claim to be the originator until some one claims priority," etc. I desire to state that I have been treating chronic constipation by lavage of the stomach for the past two years, and, I might add, with good results. On May 8, 1900, I read a paper before the Washington County Medical Society of this state, and in it I placed particular stress on the good results obtained by lavage of the stomach in chronic constipation. The following are a few extracts from my paper: "You will note that some of the medicated water which must escape through the pyloric orifice, has a twofold action on the intestines, first as an antiseptic, and second, as a stimulus to peristalsis, thereby helping to overcome constipation which you will nearly always find associated with chronic stomach disease." . . . "I wish to bring to your notice a particularly interesting case which came under my care some months ago, inasmuch as he had been operated on for appendicitis due to chronic constipa-

tion." The history and diagnosis was given, and in closing I said: "The stomach symptoms disappeared, but what I wish to show in this case is the complete disappearance of the constipation, the patient's bowels moving regularly once and twice per diem." I still have the original paper from which these quotations are taken. Very truly yours,

E. R. GARDNER, M.D.

Mark Twain and "The Doctor" in Innocents Abroad.

CHICAGO, April 23, 1901.

To the Editor:—Every little while there appears a statement in one of our medical journals concerning some doctor who is or was—for this statement usually appears in an obituary notice "the original of Mark Twain's doctor in 'Innocents Abroad.'" There is, accordingly, a possibility that the original doctor of "Innocents Abroad" may become as numerous as the original Uncle Tom of Mrs. Stowe's famous novel. I have no doubt that these statements are all made in good faith; the explanation doubtless being that the particular person of whom the statement is made has been such a jovial, clever good fellow that he might have been the original of Mark Twain's doctor even if he is not, and so the tradition had gradually grown up around him.

In order to settle the question I wrote to Mr. S. L. Clemens (Mark Twain) a few days ago calling attention to the number of the originals of his doctor, and asking him to let me know who, if anybody, was the original. The following reply from him answers that question:

NEW YORK, April 15, 1901.

Dear Sir:—It is true, as you say, that doctor is multiplying from year to year. I have six of him on my list already. I do not remember the one which you enclose. The real one was Dr. A. Reeves Jackson, of Chicago, whose too early death I still lament. Very truly yours. S. L. CLEMENS.

Wm. Allen Pusey, Esq., Chicago, Ill.

It must be a source of some satisfaction to those who knew Dr. Jackson, with all his charming and original qualities, to know that these have been immortalized in Mark Twain's famous character. Yours truly, WM. ALLEN PUSEY, M.D.

Brewer's Yeast in Tuberculosis.

BUFFALO, N. Y., April, 27, 1901.

To the Editor:—I was interested in the editorial on "General Secondary Infection in the Course of Chronic Pulmonary Tuberculosis." It is important to know that these secondary pyogenic infections occur in tuberculous cases, and they, more than the primary bacillary infection, have to do with many of the annoying symptoms, namely: chills, morning and evening rise of temperature, hectic flush, increasing pallor, night sweats, etc. Many remedies have been recommended to combat these symptoms, especially the night sweats, with but little effect. Some time ago, being interested in the subject of tonsillar infection, I saw, through the courtesy of Dr. Charles Carey, of Buffalo, a case in which, through a pyogenic infection of the tonsil, there followed a retropharyngeal abscess and a pyemia with many metastatic abscesses. Dr. Roswell Park opened the retropharyngeal abscess, but the metastatic ones appeared from time to time in various parts of the skin-surface.

Large quantities of brewer's yeast were given the patient 2 to 4 ounces every three or four hours. It was well tolerated and the patient has made a good recovery. Since this time I have used the brewer's yeast to combat the secondary pyogenic symptoms of ulcerating tubercular cases, and in the two cases in which there were chills, hectic flushes, morning decline, evening rise of temperature has remained normal. There are no further chills, no hectic flushes and no night sweats.

The remedy is easily obtained fresh from any brewery. It may be taken in a tumbler without the addition of other liquid, and my experience is that it is well borne. If the stomach can not tolerate it a rectal enema of double the quantity may be given.

It has been shown by Vaughan and others that the nucleins of the body have much to do with giving to an organism its immunity. The various organs generating neutro-albumin and nucleinic acid give to the body a substance which is destructive to micro-organisms and their toxins. Brewer's yeast contains nucleinic acid and therefore is an excellent therapeutic measure, and one which to my knowledge I have not seen recommended as such for pyogenic infection, whether a pyemia, septicopyemia, or the secondary infections in tuberculosis, diabetes, typhoid, carcinoma, etc. I have noticed yeast nuclein recommended to be given hypodermically in septicemia, but have not seen brewer's yeast mentioned.

JULIUS ULLMAN, M.D.

Association News.

Annual Announcement.

The fifty-second annual session (54th year) of the AMERICAN MEDICAL ASSOCIATION will be held in St. Paul, Minn., on Tuesday, Wednesday, Thursday and Friday, June 4, 5, 6 and 7, commencing on Tuesday at 11 a. m.

DELEGATES.

The delegates shall receive their appointment from permanently organized state medical societies, and such county and district medical societies as are recognized by representation in their respective state societies, from the medical department of the Army, the Navy and the Marine-Hospital Service of the United States, and from oral and dental societies in good standing. *Provided*, however, that no state, county or other auxiliary body sending representatives shall receive into its membership any one who may, after 1901, have received the degree of Doctor of Medicine on less than four years of graded instruction or an equivalent requirement.

Each delegate shall hold his appointment for one year, and until another is appointed to succeed him, and shall participate in all the business and the affairs of the ASSOCIATION.

Each state, county and district medical society, entitled to representation, shall have the privilege of sending to the ASSOCIATION one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number. *Provided*, however, that the number of delegates from any affiliated society shall not exceed the ratio of one in ten of the members of such society. The Army and Navy, and the Marine-Hospital Service of the United States shall be entitled to the same proportionate representation as that of affiliated medical societies.

No individual who shall be under sentence of expulsion or suspension from any state or local medical society of which he may have been a member, or whose name shall have been, for non-payment of dues, dropped from the rolls of the same, shall be received as a delegate to this Association, or be allowed any of the privileges of a member, until he shall have been relieved from the said sentence or disability by such state or local society, or shall have paid up all arrears of membership; nor shall any person not a member and supporter of a local medical society, where such a one exists, be eligible to membership in the AMERICAN MEDICAL ASSOCIATION.

No one expelled from this ASSOCIATION shall be received at any time thereafter as a delegate or member, unless by a three-fourths vote of the members present at the meeting to which he is sent, or at which he is proposed.

PERMANENT MEMBERS.

The permanent members shall consist of all those who have served in the capacity of delegates, and of such other members as may receive the appointment by unanimous vote, and shall continue such so long as they remain in good standing in the body from which they were sent as delegates, and comply with the requirements of the By-Laws of the ASSOCIATION. Permanent members shall at all times be entitled to attend the meetings, and participate in the affairs of the ASSOCIATION, so long as they shall continue to conform to its regulations, but without the right of voting.

MEMBERS BY APPLICATION.

Members by application shall consist of such members of the state, county, and district medical societies entitled to repre-

sentation in this association as shall make application for admission, in writing, to the treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the annual fee, $5. They shall have their names on the roll, shall have all the rights and privileges accorded to permanent members, and shall retain their membership on the same terms.

MEMBERS BY INVITATION.

Members by invitation shall consist of distinguished practitioners of foreign countries who may be invited by the officers of Sections or of the ASSOCIATION. They shall hold their connection with this ASSOCIATION until the close of the annual session to which they are invited, and shall be entitled to participate in all of its affairs, as in the case of delegates, but without the right to vote.

RIGHT TO VOTE.

Every member-elect, prior to the permanent organization of the annual meeting, or *before voting on any question*, after the meeting has been organized, *must exhibit his credentials to the proper committee*, and sign these regulations, inscribing his name and address in full, specifying in what capacity he attends, and, if a delegate, the title of the institution from which he has received his appointment.

DELEGATE BADGES.

No one can be registered as a delegate without a certificate as called for by the above clause in the Constitution. Delegates will be furnished with delegate badges on presentation of their credentials.

REGISTRATION AT MEETING.

Each delegate or member, when he registers, is requested to record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

ADDRESSES IN SECTIONS.

The Chairman of each Section shall prepare an address on the recent advances in the branches belonging to his Section, including such suggestions in regard to improvements or methods of work as he may deem important, and present the same to the Section over which he presides on the first day of its annual session. The reading of such address shall not occupy more than twenty minutes.

LENGTH OF PAPERS.

No paper, the reading of which occupies more than twenty minutes, shall be read before any Section.

A Suggestion as to the American Medical Association.

We have, of course, the sincerest desire that the ASSOCIATION may grow more and more powerful, and to that end we would, in the most friendly spirit, offer a suggestion which we believe would have the effect desired. It is that, without losing the democratic or representative control of the business and decisions—the direction and fate of the organization—some plan may be devised whereby a small number of delegates should thresh out all propositions and decide them according to their combined wisdom and judgment; the general meetings would thus be kept for purely scientific business. If the referendum is instituted, it should be without discussion, by the general body which must vote yea and nay at once upon presentation of the question of supporting the committee's decisions. When in earlier days the ASSOCIATION was made up of a small number, the town-meeting plan of legislation was possible; now that it has grown so large and will continue to grow still larger a manner of expediting the transaction of business should be instituted. A mob can not legislate, can not deliberate dispassionately, and several thousand people even of the best, will be subject to the laws of the psychology of crowds. This representative body might be called the senate. Each senator should be elected by his state organization and represent a stated large number of members and should devote his entire time, to the exclusion of section work, to the business of the ASSOCIATION.—*Am. Med.*, April 27.

Meeting Places at St. Paul.

The halls for meeting places for the general sessions and Sections of the AMERICAN MEDICAL ASSOCIATION are announced as follows: General Sessions, Metropolitan Opera House; Section on Practice of Medicine, Legislative Hall, State Capitol; Obstetrics and Diseases of Women, Small Masonic Hall; Surgery and Anatomy, Large Masonic Hall; Hygiene and Sanitary Science, Masonic Armory; Ophthalmology, Elks' Hall; Diseases of Children, Ryan Annex, Builders' Exchange; Stomatology, Ryan Hotel; Mental and Nervous Diseases, Committee Room of State Capitol; Cutaneous Medicine and Surgery, Masonic Banquet Hall; Laryngology and Otology, Elks' Dining-Room; Materia Medica, Pharmacy and Therapeutics, Senate Chamber, State Capitol; Physiology and Dietetics, Builders' Exchange, Ryan Annex; Pathology and Bacteriology, Ryan Annex.

Trip to the Yellowstone National Park.

The arrangements for this trip are not yet complete, though practically so. The special train, or trains, will leave St. Paul on the afternoon or evening of the fourth day of the ASSOCIATION meeting, Friday, June 7, the trip taking about thirty hours. As President McKinley and his party are to be at the Park a day or two preceding our visit everything will be in a most promising condition. The total expense of the trip will be $85, which includes railroad fare, sleepers, hotel expenses and conveyances through the Park. The total time occupied will be between eight and ten days from St. Paul. The rate is remarkably low when it is considered that the regular charge for the five and one-half days in the Park is $49.50. Those desiring to take the trip are requested to notify Dr. J. F. Fulton, St. Paul, Minn.

Next Year's Meeting of the Association.

At a special meeting of the Memphis Medical Society, held April 16, a resolution was adopted to the effect that an invitation be tendered to the AMERICAN MEDICAL ASSOCIATION to meet in Memphis at its regular annual meeting in 1902, and that every effort be made toward securing the same. It is believed by the Memphis people that the ASSOCIATION should go south next year, and that Memphis, with its population of over 110,000, is thoroughly able to entertain the ASSOCIATION. Saratoga Springs, N. Y., is also preparing to advocate at St. Paul the meeting of the ASSOCIATION at the Springs in 1902.

Delegates.

Columbia County (Pennsylvania) Medical Society has elected the following delegates to the meeting of the AMERICAN MEDICAL ASSOCIATION, with power to substitute: Dr. Geo. L. Reagan, Berwick; Edward L. Davis, Berwick; and J. Elmer Shuman, Jerseytown.

Program for the Section on Surgery and Anatomy.

TUESDAY, JUNE 4—AFTERNOON SESSION.

SURGERY OF THE BRAIN AND SPINAL CORD.

Remarks on the Surgery of the Spinal Cord, with Illustrative Cases. Andrew J. McCosh, New York City.

Spina Bifida, with the Report of an Interesting Case. Paul F. Eve, Nashville, Tenn.

The Methodical Exploration of the Brain for Fluid. Christian Fenger, Chicago.

The Immediate and Remote Effects of Brain Injury. D. S. Fairchild, Clinton, Iowa.

Cases of Trephining for Pathological Lesions of the Brain. John C. Munro, Boston.

Discussion opened by W. W. Keen, Philadelphia.

WEDNESDAY, JUNE 5—MORNING SESSION.

The Mortality of Appendicitis. John B. Deaver, Philadelphia.

Some Unusual Features of Appendicitis and Their Treatment. Ernest Laplace, Philadelphia.

Abdominal Contusions Associated with Rupture of the Intestine. Homer Gage, Worcester, Mass.

The Knot Within the Lumen, in Intestinal Surgery, with Report of Eight Cases. F. Gregory Connell, Chicago.

Surgery of the Colon. H. O. Walker, Detroit, Mich.

Fallacies in the Treatment of Urethral Diseases. Robert Holmes Greene, New York City.

Discussion opened by Willis G. McDonald, Albany, N. Y., and D. A. K. Steele, Chicago.

WEDNESDAY, JUNE 5—AFTERNOON SESSION.

THE SURGICAL ASPECT OF CARCINOMA.

The Nature of the Cancerous Process. Roswell Park, Buffalo, N. Y.

The Present Status of the Carcinoma Question. Nicholas Senn, Chicago.

Early Diagnosis of Carcinoma: Methods. Charles A. Powers, Denver, Colo.

The Pathology of Breast Carcinoma and its Relation to Early Diagnosis and Treatment. J. C. Bloodgood and M. B. Tinker, Baltimore, Md.

Carcinoma of the Cecum. Wm. J. Mayo, Rochester, Minn.

Improved Method for Resecting High Rectal Carcinoma. Robert F. Weir, New York City.
Method of Operating on Carcinoma of the Tongue. J. Collins Warren, Boston.
Treatment of Malignant Diseases by Surgical Operation. Frederick S. Dennis, New York City.

THURSDAY, JUNE 6—MORNING SESSION.

Hemostasis in Amputation at the Hip-Joint, a Résumé of 262 Cases by the Author's Method. John A. Wyeth, New York City.
Autoplastic Suture in Hernia and other Ventral Wounds. L. L. McArthur, Chicago.
A New Method of Skiagraphic Diagnosis for Renal and Ureteral Surgery. L. E. Schmidt and G. Kolischer, Chicago.
Prostatotomy versus Prostatectomy for Prostatic Hypertrophy. Ramon Guiteras, New York City.
Prostatectomy, the Method of Choice in the Management of Prostatic Obstruction. Eugene Fuller, New York City.
A Further Report on Permanent Catheterization. J. R. Eastman, Indianapolis, Ind.

THURSDAY, JUNE 6—AFTERNOON SESSION.

THE SURGERY OF THE CHEST.

Pneumectomy and Pneumotomy. J. B. Murphy, Chicago.
Insufflation of the Lungs and its Application to Pulmonary Surgery. Rudolph Matas, New Orleans, La.
Removal of Foreign Bodies from the Trachea and Bronchi. DeForest Willard, Philadelphia.
Treatment of Empyema. James H. Dunn, Minneapolis, Minn.
Penetrating Wounds of the Chest. Joseph Ransohoff, Cincinnati, Ohio.
Decortication of the Lung. George Ryerson Fowler, Brooklyn, N. Y.
Discussion opened by Frederick W. Parham, New Orleans, La.

FRIDAY, JUNE 7—MORNING SESSION.

ABDOMINAL SURGERY.

Abdominal Surgery. Maurice Richardson, Boston.
The Indications for and Against Total Removal of the Human Stomach. G. Childs Macdonald, San Francisco, Cal.
Diagnosis and Treatment of Kidney Stone. Arthur D. Bevan, Chicago.
The Surgery of the Gall-Bladder and Gall-Ducts. Alexander H. Ferguson, Chicago.
Acute Infective Cholangitis and Cholecystitis as a Complication of Gall-Stones. Daniel N. Eisendrath, Chicago.
Dissecting Abscesses of Abdominal Wall Producing Symptoms Simulating Pott's Disease of the Spine. James B. Bullitt, Louisville, Ky.
Experimental and Clinical Observations on the Therapeutics of Abdominal Surgery. George W. Crile, Cleveland, Ohio.
Discussion opened by Howard A. Kelly, Baltimore, Md., and Frank D. Smythe, Memphis, Tenn.

FRIDAY, JUNE 7—AFTERNOON SESSION.

The Roentgen Rays in Differentiating between Osseous Cyst, Osteosarcoma and Osteomyelitis with Skiagraphic Demonstration. Carl Beck, New York City.
A Simple Operation for the Treatment of Hemorrhoids. J. Rawson Pennington, Chicago.
Fracture of the Femoral Neck. C. E. Ruth, Keokuk, Iowa.

Married.

CASSIUS CLAY ROGERS, M.D., to Miss Rena B. Richards, both of Chicago, April 17.

WILLIAM H. ROBIN, M.D., to Miss Emma Meyer, both of New Orleans, La., April 17.

C. C. BARNARD, M.D., Oakville, Ind., to Miss Amy Leslie, of Arcadia, Ind., April 5.

EDWARD L. LYONS, M.D., to Miss Minnie McMahon, both of Troy, N. Y., April 10.

J. HOMER PUMPHREY, M.D., to Miss Anna Moorehead, both of Salem, Ohio, April 3.

O. H. RADKEY, M.D., Manor, Texas, to Miss Sadie Hewlett, of Austin, Texas, April 2.

ROBBINS F. LILLY, M.D., to Mrs. Bessie Baxter Volk, both of Circleville, Ohio, April 24.

FRANK F. SMITH, M.D., to Miss Nannie Miller, both of Cumberland, Md., April 3.

PRINCE C. PAGE, M.D., Bangor, Me., to Miss Ida May North, of Riverdale, Md., April 18.

J. B. GUTHRIE, JR., M.D., New Orleans, to Miss Sara Hall, of Little Rock, Ark., April 9.

HARRY H. RITTENHOUSE, M.D., Chicago, to Miss Lilias Y. Wood, of Cairo, Ill., April 30.

JAMES DAVIDSON MCDOWELL, M.D., to Miss Hattie Spencer, both of Yorkville, S. C., April 3.

SYLVESTER A. PRESTON, M.D., Beemer, Neb., to Miss Ellen Bonine, of Omaha, Neb., April 10.

ORTHELLO S. LANGWORTHY, M.D., to Mrs. Minnie E. Sheldon, both of Hamilton, N. Y., April 17.

H. F. SCHROEDER, M.D., Marinette, Wis., to Miss Mary Cecilia Consadine, of Philadelphia.

ARTHUR P. HERING, M.D., Baltimore, to Miss Agnes Louise Kinney, at Staunton, Va., April 10.

WARREN L. CAMERON, M.D., Medford, Ore., to Miss Katharine C. Vail, of Chicago, April 25.

CHARLES L. REESE, M.D., New York, N. Y., to Miss Harriett Stedman Bent in Baltimore April 10.

A. W. HON, M.D., Bloomington, Ind., to Miss Cora McFadden, of Harrodsburg, Ind., April 10.

WILLIAM MCILWAIN THOMPSON, M.D., Chicago, to Miss Anna Caruth Hill, of Boston, Mass., April 24.

THOMAS H. JAMIESON, M.D., Wellington, Kan., to Miss Laura J. Bixby, of Hutchinson, Kan., April 24.

WILLIAM A. BRITTIN, M.D., Auburn, Ill., to Miss Anna Painter, formerly of Streator, Ill., April 9.

CHARLES EDGAR AUCALT, M.D., Fredericksburg, Va., to Miss Lydia Florence New, at Baltimore, April 10.

JOHN J. EARGLE, M.D., Proctor, Texas, to Miss Louis Lee, of Lexington, Okla., at Purcell, Ind. T., March 18.

BERNARD LAWRISTON HARDIN, M.D., Washington, D.C., to Miss Rosalie T. Scott, of Warrenton, Va., April 11.

ARTHUR H. HAWKINS, Cumberland, Md., to Miss Louise Bland Brokenbrough Price, at Orange, Va., April 10.

STUART W. CASSARD, M.D., Baltimore, to Miss Mary Elizabeth Jenifer, at Towson, Baltimore County, Md., April 24.

FREDERICK L. CLARK, M.D., New Bedford, Mass., to Miss Myra Allen Dwelley, of Fairhaven, Mass., at New Bedford, April 8.

CHARLES W. BROWN, M.D., of Philadelphia, to Miss Florence Thomas, daughter of Dr. Bruce Thomas, of Kensington, Md., April 17.

DR. HOWARD H. HOPKINS, JR., M.D., to Miss Alice Eleanor Griffith Wood, both of Newmarket, Frederick County, Md., April 10.

ALEXANDER MCK. CAMPBELL, M.D., Grand Rapids, Mich., to Miss Annie Maclean, daughter of Dr. Donald Maclean, of Detroit. The former pupils and intimate professional associates of the bride's father presented a handsome antique silver tea and coffee service to the bride.

Deaths and Obituaries.

Thomas Hepburn Buckler, M.D., University of Maryland, Baltimore, 1835, died in Baltimore, April 20, rather suddenly, aged 89. From 1840 to 1850 he was physician to the City Almshouse and wrote a history of the epidemic of cholera there in 1849. The waters of the Gunpowder River were introduced into Baltimore on his suggestion, and for many years he strenuously, although unsuccessfully, urged the filling up of the "basin," or inner harbor of Baltimore. He introduced the phosphate of ammonia in the treatment of gout and the uric acid diathesis, and the succinate of iron and chloroform as gall-stone solvents. From 1866 to 1890 he practiced in Paris under a license from the French government, and represented the state of Maryland in 1878 as Commissioner to the French Exposition. He returned to Baltimore in 1890, but had not practiced since that time.

William Henry Draper, M.D., College of Physicians and Surgeons, 1855, died at his home in New York, from pneumonia, aged 70, April 26. He was born in Battleboro, Vt., 1830, was graduated the head of his class in Columbia College, and after receiving his medical degree studied in Paris and London. He was an authority on skin diseases, was a writer of ability, an acute diagnostician and a popular teacher. Always claiming to be only a general practitioner, probably no one stood higher than he in many circles of influence. He was made professor of diseases of the skin in the College of Physicians and Surgeons in 1869, and eleven years later assumed the chair of clinical medicine. He was made professor emeritus in 1898.

Prof. Giulio Bizzozero, Turin, the prominent Italian pathologist, best known from his researches on the blood, bone-marrow, lymphatic glands, etc., died April 8, after a brief illness, from double pneumonia, aged 56. He was one of the most prominent teachers in medicine in Italy, and his name is familiar throughout the world. Among his students were many of the younger pathologists of Italy, including Golgi, Tizzoni and others. He was a member of most of the Italian and many foreign medical societies, and was a senator of the Kingdom of Italy.

Charles Kerns Dease Tanner, M.D., died at Reading, April 21, from consumption, aged 51. He had represented the Irish Nationalists of the Middle Division of Cork County in parliament since 1885. He was a practising physician of Cork and received his education at Queen's College, Cork, besides pursuing his studies at the Universities of Leipsic and Dublin. Although an habitual obstructionist in the House of Commons, he was personally very popular.

Frederick J. Brockway, M.D., College of Physicians and Surgeons, New York, 1887, of New York City, died at Brattleboro, Vt., April 21, aged 41. He was assistant demonstrator of anatomy and secretary of the faculty in the medical college of which he was a graduate. Besides being a fellow of the New York Academy of Medicine, he belonged to many other scientific bodies.

Charles H. Kenegy, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1877, who had practiced at Plum River, Morseville and other places in Jo Daviess County, Ill., died suddenly from apoplexy, at Scales Mound, Ill., April 21, aged 51.

Edward M. Schaeffer, M.D., University of Maryland, Baltimore, 1880, died from a self-inflicted gunshot wound, April 21, at his home in Baltimore, Md., aged 45. He had been a sufferer from melancholia for some time.

Elmer E. Barr, M.D., Rush Medical College, Chicago, 1893, colored, who practiced in Chicago until 1898, died from consumption at Los Angeles, Cal., where he had gone for his health, April 14, aged 33.

Richard C. Baker, M.D., New York University, 1874, of Brooklyn, E. D., N. Y., died April 24, at Otigo, N. Y., aged 47. From 1888 to 1894 he was secretary and superintendent of the Brooklyn Board of Health.

Charles Dana, M.D., a son of Dr. Charles H. Dana, who died in Florida, March 25, was burned to death while endeavoring to rescue some hares from a burning barn at Tunkhannock, Pa., April 17, aged 45.

Frederick J. Bricker, M.D., University of Wooster, Cleveland, Ohio, 1876, who had practiced for twenty-three years at Aurora, Neb., died at his home in that place, April 22, from meningitis, aged 48.

Edward Watts Morris, M.D., Medical College of Virginia, 1885, died at his home in Birmingham, Ala., April 23, from pneumonia, aged 36. He was a member of the AMERICAN MEDICAL ASSOCIATION.

Edwin D. Swift, M.D., New York University, 1849, who had practiced in Hamden, Conn., for fifty-two years, died at his home near that place, from Bright's disease, April 18, aged 76 years.

Frederick A. Larkin, M.D., Rush Medical College, Chicago, 1892, of Chicago, a member of the AMERICAN MEDICAL ASSOCIATION, died in Philadelphia, after a surgical operation, April 23.

James H. Woodburn, M.D., University of Louisville, Ky., 1857, of Indianapolis, Ind., formerly superintendent of the Central Hospital for the Insane, died suddenly, April 23.

Charles Kelley Gardiner, M.D., Medical College of Virginia, Richmond, 1880, died at Huntington, W. Va., April 14, from the effects of an overdose of laudanum.

George W. Cox, M.D., Medico-Chirurgical College of Philadelphia, 1887, died suddenly from exhaustion following a severe attack of la grippe, April 19, aged 60.

Aimon V. Belding, M.D., College of Physicians and Surgeons of the Western District of New York, Fairfield, died in Rochester, N. Y., April 18, aged 94.

B. F. Hill, M.D., who practiced at Mexico, Mo., until two years ago, died from consumption at his father's home in Bardstown, Ky., April 16, aged 45.

George S. Cogswell, M.D., Dartmouth Medical College, Hanover, N. H., 1830, died at his home in Haverhill, Mass., April 21, aged 93.

James S. Carradine, M.D., University of Pennsylvania, 1858, of New York City, died from pneumonia, at East Orange, N. J., April 23.

William Harrell, M.D., Louisville (Ky.) Medical College, 1870, died at his home in Tifton, Ga., from pneumonia, April 10, aged 60.

Leonard Howard Moxim, M.D., Medical School of Maine, Brunswick, 1855, died at his home in Hartford, Maine, April 15, aged 71.

Roy Inglis, M.D., College of Physicians and Surgeons, New York, 1890, of Jersey City, N. J., died at Denver, Colo., April 23.

Ira J. Fuller, M.D., University of Vermont, Burlington, 1888, died at his home in Spragueville, N. Y., April 19, aged 43 years.

John J. Durand, M.D., a veteran physician of Chattanooga, Tenn., died from apoplexy at his home in that city, April 16, aged 72.

Lewis R. Kirk, M.D., Jefferson Medical College, Philadelphia, 1853, died at Rising Sun, Md., April 19, of heart trouble, aged 69.

Alfred H. Hiatt, M.D., Medical College of Ohio, Cincinnati, 1846, died at his home in Chicago, April 26, aged 77.

Miscellany.

A Christian Science Miracle.—The *New York Med. Jour.*, April 13, is responsible for the following: It is related that Charles Lamb and Douglas Jerrold were once discussing the extent to which animals could be domesticated, when Lamb in support of his argument told the story of a tame oyster which used to follow him up and down stairs. To this Jerrold retorted that the oyster had one advantage at least over Lamb. "What is that?" asked Lamb. "It knows when to shut its mouth," tartly responded Jerrold. At the recent dedication of a new Christian Science meeting house it was officially stated that a granite corner-stone had been duly carved with an inscription wrongly given under a mis-apprehension, and that the day before it was to be laid the mistake was discovered too late to admit of alteration. The omnipotent witchery of Christian Science methods, the mental concentration and focussing of "truth" upon this "error of mortal mind" enshrined in granite, was brought to bear by the undaunted devotees, when, lo! upon uncovering the block it was found that the erroneous carving had disappeared and an unexceptionable inscription had taken its place. We are curious to know whether the engraver was guilty of a fortunate disregard of his instructions, or the error therein was discovered and corrected in time, but secretly for the sake of subsequent "effect," or the narrator——. But, no. Let us rest content with recommending the moral of the Lamb-Jerrold story to the notice of the votaries of Christian Science.

The Refracting Optician.—The *Providence* (R. I.) *Med. Journal* for April says: "Not long ago the following letter was received by an oculist in this city from one of the enterprising opticians who flourish in the rich soil of Rhode Island fertilized by an inefficient medical practice act: 'Dr. ——, Dear Sir: I wish to make a proposition to you. For every prescription you send to me I will give you one-third of the profits, send your statement and money the first of every week. This is to be strictly confidential. Hoping to have some of your work, I remain very truly yours, ——.' It is strange that

any one should expect to find a physician so false to his professional honor that he would for a moment consider such a proposition. It is both insulting and degrading and, would it serve any good, the name of the writer would be appended to the letter; but it serves as a text to speak of a growing evil in our city and state. The daily papers, both city and county, are filled with advertisements of jewelers and opticians, opticists and refractionists, who fit all eyes, correctly measure for glasses and cure headaches, nervous affections and even more serious ailments. At any rate, one would be justified in assuming that they could do all this if credence is given to the advertisements. As a matter of fact, aside from the mechanical part of refraction, which is easily learned, the majority know nothing of physiological optics and are wholly unfitted to deal with either refractive errors or muscular anomalies. The old argument against all law regulating the practice of medicine that every man shall treat his own as he desires, or shall not treat them at all, is inoperative. No man can be allowed by an error of judgment to do himself personal injury, or by parental or marital authority allow harm to come to his family. The State has a right to demand of its citizens compliance with laws which regulate its well-being. This is recognized by both adherents and opponents of the proper regulation of the practice of medicine, on one hand by the interpretation of existing laws and on the other, as in Massachusetts at the present time, by an attempt to pass legislation which will legalize the pseudo-profession of opticists. We may take it for granted, therefore, that some restriction is needed if it can be found that harm results from the present practice of allowing wholly incompetent persons to prescribe for the welfare of the eyes."

Societies.

COMING MEETINGS.

American Medical Association, St. Paul, Minn., June 4-7.
American Surgical Association, Baltimore, Md., May 7-9, 1901.
American Therapeutic Society, Washington, D. C., May 7-9, 1901.
Nebraska State Medical Society, Lincoln, May 7-9, 1901.
Oklahoma Territory Medical Association, Oklahoma City, May 8, 1901.
Mississippi State Medical Association, Jackson, May 8, 1901.
Washington State Medical Society, Seattle, May 8-9, 1901.
Ohio State Medical Society, Cincinnati, May 8-10, 1901.
Arkansas Medical Society, Hot Springs, May 14-16, 1901.
Medical Association of Montana, Great Falls, May 15-16, 1901.
Michigan State Medical Society, Battle Creek, May 15-16, 1901.
Iowa State Medical Society, Davenport, May 15, 1901.
Indiana State Medical Society, South Bend, May 15-17, 1901.
New Hampshire Medical Society, Concord, May 16-17, 1901.
Medical Association of Missouri, Jefferson City, May 21-23, 1901.
Illinois State Medical Society, Peoria, May 21-23, 1901.
Medical Society of North Carolina, Durham, May 21-23, 1901.
Connecticut Medical Society, Hartford, May 22-23, 1901.
North Dakota Medical Society, Fargo, May 22-23, 1901.
Kentucky State Medical Society, Louisville, May 22-24, 1901.
Medical Society of West Virginia, Grafton, May 22-24, 1901.
American Laryngological, Rhinological and Otological Society, New York City, May 23-25, 1901.
American Laryngological Association, New Haven, Conn., May 27-29, 1901.
American Pediatric Society, Niagara Falls, N. Y., May 28, 1901.
American Gynecological Association, Chicago, May 28, 1901.
American Climatological Association, Niagara Falls, N. Y., May 30, 1901.
American Association of Military Surgeons of the United States, St. Paul, May 30, 31, June 1, 1901.
American Academy of Medicine, St. Paul, Minn., June 1-3.
National Con. State Medical Examiners and Licensing Boards, St. Paul, Minn., June 3.
Association of American Medical Colleges, St. Paul, June 3.
American Medical Editors' Association, St. Paul, June 3.
Minnesota State Medical Society, St. Paul, June 3.
American Proctological Association, St. Paul, Minn., June 4-5.
American Dermatological Association, Chicago, June 4-6.
Rhode Island Medical Society, Providence, June 6.
International Association of Railway Surgeons, Milwaukee, June 10-12.
Medical Society of Delaware, Lewes, June 11.
American Medico-Psychological Association, Milwaukee, Wis., June 11-14.
Maine Medical Association, Portland, June 12-14.
Massachusetts Medical Society, Boston, June 12.
Colorado State Medical Society, Denver, June 18.
American Orthopedic Association, Niagara Falls, June 18-20.
Medical Society of New Jersey, Allenhurst, June 25-27.
Wisconsin State Medical Society, Waukesha, June 26.

American Proctologic Society.—The third annual meeting of this Society will be held at the Ramsey County Library, St. Paul, Minn., June 4 and 5.

Central (Ky.) Medical Association.—At the April 19 meeting of this Society, at Danville, Dr. George Cowan of that city was elected president, and Dr. Steele Bailey, Stanford, secretary.

Nebraska State Medical Society.—The thirty-third annual meeting of this Society will take place May 7, 8 and 9, at Lincoln, under the presidency of Dr. Harry M. McClanahan, Omaha.

Cecil County (Md.) Medical Society.—At its annual convention, this Society elected Dr. Joseph Veasey Wallace, Chesapeake City, president; Dr. John H. Jamar, Elkton, treasurer, and Dr. Harry P. Hinchliffe, Elkton, secretary.

Hartford County (Conn.) Medical Association.—The one hundred and ninth annual session of this Association was held April 17. Dr. George Clary, New Britain, was elected president; Dr. Nathan Mayer, Hartford, vice-president, and Dr. William G. Craig, Hartford, clerk.

Ohio State Medical Society.—The fifty-sixth annual meeting of this Society will be held at Cincinnati, May 8, 9 and 10, at the Scottish Rite Cathedral, Broadway near Fourth Street. Dr. Frank D. Bain, Kenton, will preside.

Golden Belt (Kan.) Medical Association.—This Association, at its meeting in Abilene, April 18, elected Dr. John C. McClintock, Topeka, president; Dr. John D. Riddell, Enterprise, treasurer, and Dr. E. B. LeFevre, Abilene, secretary. The next meeting will be held in Topeka in July.

Tolland County (Conn.) Medical Association.—The one hundred and ninth annual meeting of this Association was held in Rockville, April 16. Dr. Thomas F. O'Loughlin, Rockville, was elected president; Dr. Eli P. Flint, Rockville, vice-president; and Dr. Edwin T. Davis, Ellington, clerk and treasurer.

Walla Walla (Wash.) Medical Society.—A society to further the interests of the physicians of the city and county has been organized with Dr. Elsworth E. Shaw, president; Dr. Nelson G. Blalock, vice-president; Dr. Samuel A. Owens, secretary and Dr. William Van Patten, treasurer.

Central of Georgia Railway Surgeons' Association.—The annual meeting of this organization occurred in Augusta, April 17, and the following officers were re-elected: Dr. Hunter P. Cooper, Atlanta, president; Dr. Benjamin R. Dostor, Blakely, vice-president, and Dr. Wm. Darracott Travis, Covington, secretary and treasurer.

Shreveport (La.) Medical Society.—The annual meeting of this Society was held April 13, when the following officers were elected: Dr. T. Edgar Schumpert, president; Dr. William L. Egan, vice-president; Dr. Greene C. Chandler, corresponding secretary; Dr. Fred J. Frater, recording secretary, and D. John J. Scott, treasurer.

Austin Flint Medical Society.—The spring meeting of this Society was held at Hampton, Iowa, April 11, and the following officers elected: Dr. Daniel W. Crouse, Waterloo, president; Dr. J. Clinton Powers, Hampton, vice-president, and Dr. Lester C. Kern, Waverly, secretary-treasurer. The July meeting will be at Clear Lake.

Georgia State Medical Association.—The fifty-second annual meeting of this body was held in Augusta, April 17-19, Dr. Samuel C. Benedict, Athens, in the chair. Savannah was selected as the next place of meeting, and the following officers were elected: Dr. James B. Baird, Atlanta, president; Drs. Thomas R. Wright, Augusta, and Jefferson D. Chason, Bainbridge, vice-presidents; and Dr. Louis H. Jones, Atlanta, secretary and treasurer.

Jo Daviess County (Ill.) Medical Society.—The first anniversary meeting of this Society was held in Elizabeth, April 25. Dr. Henry T. Godfrey, Galena, was elected president; Dr. G. E. Miller, Hanover, vice-president; Dr. Domer G. Smith, Elizabeth, secretary, and Dr. T. J. Stafford, Galena, treasurer. Delegates to the AMERICAN MEDICAL ASSOCIATION were also appointed. The Society was entertained at a banquet, by Drs. William Hutton and Domer G. Smith, Elizabeth.

Alabama State Medical Society.—At the annual meeting of this Society, held at Selma, April 16-19, the following officers were elected: Dr. Edwin L. Marechal, Mobile, president; Drs. William T. Pride, Madison Station, and Matthew B. Cameron, Sumterville, vice-presidents; Dr. George P. Waller,

Montgomery, secretary: Dr. Henry G. Perry, Greensboro, treasurer, and Dr. Edwin B. Ward, Selma, orator. Birmingham was selected as the place for the next annual meeting.

Medical Society of the State of California.—The annual session of this Society was held at Sacramento, April 16-18. A proposition to establish a monthly journal as the organ of the Society was voted down. San Francisco was selected as the next meeting place. The following officers were elected: Dr. William J. G. Dawson, St. Helena, president; Drs. Frank B. Carpenter, San Francisco, and Frank L. Adams, Oakland, vice-presidents; Dr. George H. Evans, San Francisco, secretary; Drs. Z. Taylor Malaby and William F. Barbat, San Francisco, assistant secretaries; Dr. Elmer E. Kelley, San Francisco, treasurer, and Drs. Charles C. Wadsworth, San Francisco, Dudley Tait, Ventura, Cephas S. Bard, Ventura, David Powell, Marysville, and Daniel E. Osborne, St. Helena, board of medical examiners.

Erie County (N. Y.) Society for the Prevention of Tuberculosis.—An informal meeting of this newly organized Society was held April 18. Encouraging letters were read from other societies with a like purpose. The lines of work laid down are as follows: 1, promulgating the doctrine of the contagiousness of the disease; 2, instructing the public in practical methods of its avoidance and prevention; 3, advocating the establishment of institutions for its early treatment; 4, co-operating with boards of health in such measures as may tend to the prevention of the disease; 5, advocating the enactment of proper legislation, and 6, taking such other measures as from time to time may be deemed necessary to check the ravages of tuberculosis.

South Carolina Medical Association.—The fifty-first annual meeting of this organization was held in Florence, April 17 and 18. Dr. Wharton Sinkler, of Philadelphia, delivered the annual address. The application of graduates of the class of 1900-01 of the South Carolina Medical College, for membership were held over till the next annual meeting for consideration, or until they comply with the requirements of the law. The following officers were elected: Dr. Theodore G. Croft, Aiken, president; Drs. Curran B. Earle, Greenville, W. Price Timmerman, and John T. Darwin, Blacksburg, vice-presidents; Dr. William Weston, Columbia, corresponding secretary; Dr. T. Prioleau Whaley, Charleston, recording secretary, and Dr. Barnard E. Baker, Charleston, treasurer. Dr. Walter P. Porcher, Charleston, was chosen as a member of the Board of Medical Examiners, to succeed Dr. Robert L. Brodie.

DETROIT MEDICAL SOCIETY.

Meeting held April 3.

Hydrocele of Round Ligament.

DR. FRANK D. SUMMERS exhibited a very rare and interesting hydrocele tumor of the round ligament. It was about four inches in length and the size of a large Frankfurt sausage. The upper portion had been constricted by the left inguinal ring so that a cyst tumor about the size of a large walnut was within the abdominal cavity. The lower end of the tumor was attached in the left labium majus.

About ten years ago the woman called a surgeon to reduce for her an inguinal hernia, and it had to be done under chloroform. Following his advice she wore a truss until about three months ago. On Saturday, March 30, her attention was attracted to the left inguinal region by a sudden sharp pain, followed by a chill, at which time she discovered the swelling; and considering it the same old hernia that had come out before, she thought she could probably reduce it herself. By the next day (Sunday) her pain was so intense that she called Dr. Summers, and he found a tumefaction that would not reduce and ordered her to St. Mary's Hospital and operated at once with the above results. He dissected out the tumor very carefully, with a portion of the round ligament attached to each end, and closed up the inguinal ring completely, which is healing by first intention.

Elasticity of the Skull.

DR. ANGUS MCLEAN read a paper on this subject and exhibited specimens. This was demonstrated on the cadaver by placing clamps over the lateral and anteroposterior regions. In lateral compression this diameter was decreased half an inch and in longitudinal three-eights of an inch before the cranium fractured. When one diameter was diminished the others were increased. The calvaria was removed while the clamps were in position, and comparison made. The superior-inferior measurements were made by boring gimlet holes through the vertex and passing small graded steel rods to the base. The skull did not fracture at the points of compression, but through the anterior base. Serious endocranial lesions might be produced without any bone lesion.

CHICAGO ACADEMY OF MEDICINE.

Meeting held March 27.

Dr. W. X. Sudduth in the chair.

Intrauterine Periods of Stress.

DR. JAMES G. KIERNAN read a paper on this subject. After some introductory remarks, he said: The law of economy of growth governs the relation of the organs to each other and the operation of the process whereby one structure is sacrificed for the development of another. Since the evolution of organs certain parts disappear, certain ones through suppressive economy, and since the disappearing and developing tendency of necessity centers around the time when certain functions are to be lost by the disappearing, and others gained by the developing, periods of stress occur around which the law of economy of growth centers the struggle for existence between parts of organs and between organs themselves. Because of this, physiologic atrophies and hypertrophies occur. Nearly all conditions of physiologic disturbance may result at these periods of stress from the influence of maternal nutrition or environment, or of hereditary factors.

While the fetus may pass through all periods of stress, a seeming replica of its immediate ancestors, still since nutriment assimilable by a given organism is limited, a check of development at certain stages often turns the nutriment in the direction of organs or cells or functions which should disappear at that particular stage. Man passes through the polyphyodont potentiality before reaching the diphyodont, which is the dental characteristic of the race. Arrest of development at the period when polyphyodont potentialities are present implies the dentition found in the Sauropsidæ, where teeth continually disappear to be continually replaced. Through such arrest a child may develop successively several hundred teeth. Since teeth are among the most variable structures in evolution, upon them is peculiarly evident the effects of stress. The struggle between the diphyodont and the polyphyodont condition early in human embryogeny may result in jaw atrophy and tooth increase in size. On the other hand, tooth decrease in size and jaw hypertrophy may occur. In the first case, decided irregularity of the teeth occurs in a comparatively normal subject. In the second case, seeming absence of irregularity will occur in a hereditarily defective subject. Jaw decrease as well as arrest of the face has been determined by general surrender of the system to brain growth. The development of the face in vertebrates is checked in man, because the upright position renders it unnecessary to bend the head as in quadrupeds, and because the enormous cerebral development has rendered necessary brain cavity enlargement by extending the cavity over the nose region, in addition to enlarging the skull. Normal vertebrate development of the face is therefore arrested in man at an embryonic stage. The long jowl, an advance in face development, does not occur in man. The skull is a development partly of the vertebræ, and partly of dermal bones. The dermal bones are the frontals, the parietals, the nasal bones, the pterygoids, palatines, maxillaries, premaxillaries and mandibles. The fontanelles in the child are spots in which dermal bones are yet to be formed. Development of the brain depends upon the growing power of the secondary skull formed by the dermal bones. These considered as bones are degenerate remains of the outer skeleton of the head which in early fish and reptiles emulated the lobster. Because of their very degeneracy they have been utilized to aid in covering the brain.

Dr. Kiernan then enumerated some of the conditions of fetal life corresponding to permanent phases in the lower animals, and said that as the power of passing through the fetal period

of stress will depend on the condition in which the fetal organism is at the time of the period of stress, and as this condition of the fetal organism will depend partly on factors inherited and partly on the material condition, it must be obvious that defect in either at these periods of stress may so disarrange the struggle for existence between the fetal organs that reversionary conditions will gain the ascendancy.

The fetal periods of stress of the organism as a whole, which most deserve attention, are those of the senile (or simian) period of intra-uterine life (which occurs about 4½ months after conception) and the period of sex differentiation. Arrest at the senile period through any of the processes which check development, exercises marked influence on extra-uterine development. When produced by syphilis—which so frequently causes the senile appearance of new-born children—the child, because of organs which have undergone premature senescence, fails to pass through the first dentition, or readily falls a victim to secondary infections. Precocity, whether of the intellectual or physical type, is an expression of senile arrest of development, which causes the child to pass through growth and senescence rapidly. Minor expressions also occur, involving the skin alone, while the rest of the system is comparatively unaffected.

The truth of the popular opinion of precocity—early ripe, early rotten—is illustrated very frequently. Cratemus, a brother of Antigonus, was an infant, a youth, adult, married, begat children, and senile in seven years. Louis II, of Hungary, was crowned in his second year, at 14 had a complete beard, at 15 was married, at 18 had gray hair, and at 20 died. One boy had external marks of puberty at 12 months, and died senile at 5. Of six cases of early puberty in boys cited by Gould, one, virile at 1 year, died senile at 5. Cazaeux reports the case of a girl who menstruated at 2, became pregnant at 8, was a grandmother and senile at 25. Another child of 3, with the breasts and genitals of a woman, and menstruation of a nubile girl, had a senile appearance.

Premature senility may evince itself in atheroma of the arteries at the periods of extra-uterine stress. This has been observed rather frequently in the children of vegetarians and after the essential fevers.

Sex is not inherited, but the result of various factors acting not only at the time of impregnation, but at various times thereafter. Long after impregnation, when the embryo is already developed, nutrition is still influential and may change the tendency even after the sexual organs have developed. Poor maternal nutrition may arrest female development, causing reversion to the male type. The psychic side of sexual differences should normally, as it often does, remain undifferentiated until adolescence. Adolescence is affected by the atavistic tendency to simian senility, which implies its early onset.

The biologic facts stated show that there is a factor at work in intra-uterine life independent of heredity and operating only at certain periods. Heredity, so far as its working forces are concerned, consists of immediate heredity from the parents, of immediate atavism or type heredity and of remote atavism. These forces are usually in conflict. Type heredity and immediate heredity offset remote atavism, as a rule. Deficiency, either immediate heredity or type heredity brings remote atavism into full play, and is the source of degeneracy. Strong type heredity may, however, offset the evil influence of defective immediate heredity. The question of the sway of these factors turns on the etiologic moment of the period of stress when either the organism balance or some structure or function may be checked to give undue play to a structure or function useless or worse under the present biologic status of man. Heredity, therefore, is modified by an etiologic moment occurring at the period of stress. Malign heredity is often destroyed or diminished by the immediate effects of type heredity. Hence, in even the most hereditarily defective families sound members are found. Variations are often introduced by the struggle between the hereditary forces at the periods of stress which prove beneficial under a favoring environment. Hypertrophy due to degeneracy may thus place the subject in a higher position than the ancestor under the favoring influence of environment.

DR. ALFRED C. COTTON stated a firmly grounded belief in the influence of maternal impressions had not as yet been shaken either from the lay or professional mind. During intra-uterine or embryonic life certain influences produce, at times, more perfect impressions than at others. Efforts directed toward the stress periods of embryologic existence are in the nature of pioneer work to prepare the way for systematic observations. Postmortem findings demonstrate that environment more than heredity may influence the status of the infant. The persistency of the senile type of infant led Henoch to call the state infantile atrophy, a pathologic condition which had never been satisfactorily described histologically and pathologically. Senility makes an early impress upon many cases that are called infantile atrophy.

DR. CHARLES S. BACON said that it is fairly well established that periodicity exists in growth and changes. This is noticeable when the earliest forms of cell development are studied. When the fertilized ovum is studied under the microscope, a quiescent state is noted until suddenly the nucleus and cell divide and in the course of a short time, the homogeneous mass assumes another shape. In the child an important cycle occurs at puberty, and later, both in male and female, are cycles corresponding more or less to monthly changes. Periodicity then becomes a well-established fact. The importance of sound balance for the developing organism, at those periods, is undoubtedly great. The intra-uterine being is quite independent of the mother. The child may be fairly well nourished, although the mother is improperly nourished. In starving mothers the child is often well developed. So the periods of the child's development are not so dependent on the mother's condition as might at first appear. While important periods occur in the development of the child, it does not follow that those periods should coincide with the mother's period.

DR. EUGENE S. TALBOT stated that perhaps no structures in the body are so much affected by the law of economy of growth as the face, jaws and teeth. Under this law is exerted a natural force causing brain development and resultant jaw recession. The jaws are not now required for the purpose they were originally, hence an arrest of development is taking place. Originally the jaws measured 2¾ inches across; now the average one measures only about two inches. On some adult patients the jaws only measure three-quarters of an inch. The senile stage occurs at about 4½ months of fetal life, a period in which the teeth are more readily affected than any other structures of the body. If change should occur about the fourth month of fetal life, the teeth are liable to alter in shape and structure. Teeth without enamel are frequently found, sometimes slight amounts of enamel may be found on some teeth. Occasionally children are born who have no teeth throughout life. These changes are the effect of the swaying between the diphyodont normal state and the polyphyodont state of reptiles at a period of stress.

Absorption of the alveolar process is an expression of polyphyodont physiology. Were a man to live long enough, he would lose his second set of teeth by osteomalacia or senile absorption. Senile absorption may occur at any period in the life of the individual. It is more frequently noticed in degenerates, neurotics, deaf-mutes, congenitally blind and idiots. To this senile condition is due the transitory nature of the alveolar process. Decay of the teeth is a natural process.

DR. SANGER BROWN believes that there is no warrant for designating the changes described as periods of stress, because they did not take place properly. Physicians are not warranted in regarding those periods in which changes are observable as of more importance than those that are imperceptible between the manifestations observed. While a law of observable periodicity is perhaps admissible, yet this is not equivalent to proving that observable manifestations are more important or exert more influence upon development than the periods when so much activity can not be observed.

DR. WILLIAM L. BAUM believes that there are periods of stress. One of the greatest examples of the influence of these in modern times was the remarkable number of defective children born immediately after and during the siege of Paris.

Anatomic changes must not be considered alone. Those which occur at certain periods during intra-uterine life reflect in the individual the consequences of nutritional change. This is very well shown in the syphilitic child. At one time the elder Ricord claimed that the child could not be infected from a syphilitic mother if she became infected later than the third month of pregnancy. This period has now been extended to the sixth month. This was true not only of syphilis, but of congenital ichthyosis. The same changes appear in ichthyotic children when development of the teeth takes place. Dermatology furnishes many examples which, from knowledge of embryology, can be attributed to certain periods. These periods often coincide with periods of altered nutrition in the mother. Hence it is obvious that the periods of stress have some influence not only upon nutrition temporarily, but upon the future of the child. There are cases of congenital hairy individuals, showing at the period of the evolution of the hair follicle that there must have been some nutritional change at that time. Many congenital dermal growths demonstrate that at one time there must have been some localized nutritional change in the fetus itself, such as are evinced in the various types of nevi. About fifty different dermatoses of congenital origin sometimes interfere with the future of the child.

DR. KIERNAN, in closing, defined what he meant by periods of stress. He had simply grouped biologic laws and embryologic facts together. Had they been nosologic facts their validity would have been recognized. The fetus was regarded as an organism subject to certain developments like those of the child in the period of the first dentition, in the period of second dentition, in the period of puberty, and subject furthermore to maternal environment. When a child is prematurely born with certain monstrosities, Dr. Bacon recognizes that this is arrest of development. If, however, under certain conditions some of its organs are arrested while the child is viable and lives for a certain time, Dr. Bacon could not, under the dictum laid down, regard these arrests of development, provided the child was apparently well nourished. A congenitally well-nourished infant is not necessarily a perfectly-developed one. The children of phthisical, syphilitic mothers, as also of mothers with other defects, may be well nourished at birth, yet break down at the first dentition, the second, during puberty, or even later, because of congenital defects. Luetic children may be apparently well developed, yet have, as Fournier has shown, defects simply due to arrest of development.

Suturing of Large Blood-Vessels.

DR. A. E. HALSTEAD read a paper on this topic, reporting the case of Mrs. S., aged 43, operated on by him in the latter part of May, 1900, for advanced mammary carcinoma. At this operation, the whole mammary gland, with both pectoral muscles and their fascia and the axillary glands and fat were removed in one mass by sharp dissection. The infraclavicular glands were slightly enlarged, and were also removed. No change in the cervical glands was noted at this time. Four months later the glands along the posterior border of the sterno-cleido-mastoid began to enlarge and were removed. They were found to be carcinomatous. About the middle of October, a small nodule began to grow at the outer end of the clavicle, which was somewhat deep-seated and painful. In two weeks the pain disappeared, and the nodule appeared to diminish in size. In the latter part of November the tumor again became painful and rapidly increased in size. On December 14 she presented herself for examination, when a tumor, about the size of a walnut, could be felt deeply seated, just below the coracoid process. The patient was advised to have this tumor removed, and accordingly was sent to the Policlinic Hospital, where, on December 14, under ether anesthesia, an incision was made parallel with the old line of incision, curving downward and outward from the middle of the clavicle to the floor of the axilla. The tumor was found to have originated in the short stump of the small pectoral muscle which was left attached to the coracoid process. It had pushed up the inner fibers of the deltoid to which it had become adherent and had involved the upper part of the coraco-brachialis and the capsule of the shoulder-joint. The coraco-brachialis with the inner third of the deltoid were dissected from below upward, and with the tumor and the part of capsule, about two inches of the axillary vein were removed. Just before the dissection was completed the axillary artery was found adherent by its fascia to the tumor at a point about on a level with the insertion of the pectoralis minor muscle. By means of sharp, curved scissors, the artery was being freed from its attachment to the tumor, when the vessel was accidentally cut obliquely through about two-thirds of its circumference. The violent hemorrhage that immediately followed was controlled by placing the index finger of the left hand under the artery and pressing it up against the clavicle. The operative field was then sponged dry and the wound of the vessel inspected. At the time of the first operation, all the branches of the axillary artery, excepting the circumflex had been divided. While removing the recurrent growth, the anterior circumflex had been cut so that there was practically no chance for collateral circulation to be established. Under the circumstances the only chance of saving the arm was to suture the artery. Accordingly, while the circulation was controlled by pressure of the left index finger, four interrupted catgut sutures were passed through the two outer coats of the vessel and tied. This effectually closed the wound in the vessel so that no hemorrhage followed removal of pressure from the artery. To support these sutures, the perivascular connective tissue was sutured longitudinally with a fine catgut suture. The tumor was then dissected from the vessel and the wound closed in the ordinary way. The radial pulse was immediately restored and was as full as that of the opposite side. The patient made a good recovery from the immediate effects of the operation, and had at no time any disturbance of the circulation of the arm. She left the hospital at the end of two weeks. Two months after the operation there was still a radial pulse on the left side of a volume equal to that on the right.

Dr. Halstead then referred at considerable length to the work, experimental and otherwise, of Muscatello, Tichow, Orlow, Nitze, Bruci, Doerfler, Abbey, Zoege von Manteuffel, Murphy, Lindner, Ziegler, Kuemmel, Garrie and others. The indications for arterial suture are: 1. In all cases of injury to a vessel or vessels, where a ligature might bring about serious nutritional changes to the part supplied by the injured vessels. This is especially apt to occur when the corresponding vein is injured at the same time. In such cases an effort should be made to repair both vessels, although if the arterial circulation is established, the necessity of restoring the continuity of the vein is not so imperative. 2. In all wounds of large vessels produced by puncture, gunshot, or laceration. 3. Operation wounds of large vessels, accidental or intentional, as, when for any reason a part of the vessel must be sacrificed.

In dealing with the technique of suture of wounds of blood-vessels, the means of securing temporary hemostasis, the suture material to employ, and the manner in which the sutures are to be introduced should be considered.

Since operating on the case reported, in doing experimental suture of arteries on dogs, he has secured temporary control of the circulation by passing a loop of tape around the vessel and twisting it until the lumen of the vessel is closed, then holding the tape by means of an artery forceps applied close to the vessel. With this method, the wall of the vessel is not injured, and the ligature can be quickly removed after the suture is completed. This method also has an advantage over digital compression, in that it excludes from the field of operation the hands of an assistant that are in the way and may be a source of infection.

DR. KIERNAN referred to the possibility of embolism following the suturing of vessels, and asked whether in a case in which there was a thrombotic tendency suturing of the artery would not be contraindicated. It seemed to him that in suturing the carotid or vertebral artery in neurotic conditions there would be a slight tendency to thrombosis.

DR. HALSTEAD stated that theoretically it had been claimed that a mural thrombus forms, but actual experiments have shown that it is not so, even with through-and-through suture, and the formation of a thrombus does not occur except under very exceptional circumstances.

Therapeutics.

Treatment of Dysentery.

Dr. W. J. Buchanan, Superintendent Central Prison, Bhagalpur, Bengal, as noted in *Brit. Med. Jour.*, has employed the saline treatment in dysentery in 855 cases, with only 9 deaths. The formula he used is as follows:

℞.	Sodii sulphatis	℥i	4
	Aquæ fœniculi q. s. ad	℥i	32

M. Sig.: One such dose to be given six or eight times a day, as the case may require.

The saline should be continued until every trace of blood and mucus has disappeared. This treatment will relieve the tenesmus. Dr. Buchanan advises the use of salines in acute cases only. He does not consider it a safe method for chronic or collapsing cases with ulceration of the colon. In those patients he uses only one or two doses and then continues to treat the case with soda and bismuth or with salol, with an occasional dose of castor-oil.

H. B. T. Symons, of Sorrento, Italy, in the same journal advises the following local treatment in the amebic variety of the disease:

℞.	Acidi tannici	℥ss	2
	Aquæ destil.	Oi	512

M. Sig.: Use as a douche every four hours. The water should first be warmed.

He states that he has found it of great benefit in rapidly diminishing the number of evacuations and speedily mitigating the distressing tenesmus. Hot hip baths are of value in relieving the abdominal discomfort and local smarting. This treatment with small doses of opium by the mouth, rest in bed, and a strictly milk diet comprises an outline of treatment which generally affords prompt and permanent relief.

It is recommended by Dr. Potilov in *Les Nouveaux Rem.*, that ichthyol be used in treatment of dysentery. He uses the following formula:

℞.	Ichthyoli	℥vii	28
	Aq. destil	Oii	1024

M. Sig.: Use an injection every other day. An effort must be made to get the enema as high in the bowel as possible, when the pains will subside quickly. The enema should be preceded by a dose of oleum ricini.

Treatment of Measles.

The following combination is of service by aiding the elimination of the toxic substances and reducing temperature:

℞.	Potassii citratis	℥iii	12
	Tinct. aconiti	m. vi	36
	Spts. etheris nitrosi	℥iss	6
	Syr. tolutani	℥i	32
	Aquæ q. s. ad	℥iii	96

M. Sig.: One teaspoonful every three hours for a child of 6 years or older.

For the bronchitis the following:

℞.	Codeinæ sulphatis	gr. iss	09
	Syr. ipecacuanhæ	m. xxx	2
	Syr. pruni virginianæ	℥ss	16
	Aq. aurantii q. s. ad	℥ii	64

M. Sig.: One teaspoonful every two hours for a child 4 years of age or older.

A Dressing for Varicose Ulcers.

℞.	Glycerini		
	Zinci oxidi		
	Gelatin. (albus), āā	℥i	32
	Aquæ destil.	℥iii	96

M. Sig.: Heat in a water bath. Apply several coats with a brush to protect the ulcers.

A DUSTING POWDER FOR ULCERS.

℞.	Iodoformi		
	Salol, āā	℥ss	16
	Bismuthi subnitratis	℥vi	24
	Pulv. carbo. ligni (charcoal)		
	Pulv. cinchonæ		
	Pulv. benzoini, āā	℥i	32

M. Sig.: To be used as a dusting powder.

Intensive Guaiacolization in Phthisis.

This is the title of a communication presented by A. Weill and Berger, at the International Medical Congress. They aim to administer guaiacol by every possible route. 1. A small rectal injection of a quarter of a glass of milk to which 40 or 50 drops of guaiacolized oil have been added. 2. Application of the same substance externally to the thorax every day, restricting the application to an extent of surface 8 by 10 cm. square, and passing to other portions of the thorax. 3. Guaiacol pills every three or four hours during the day only, made according to the following formula:

℞.	Guaiacol (synthetic)	gr. 1/6	01
	Crys. terpin. hydratis	gr. 1/3	02
	Acidi benzoici	gr. ss	03
	Ext. belladonnæ		
	Ext. hyoscyami, āā	gr. 1/600	0001

M. ft. pil. No. i. Sig.: One such every three or four hours.

This intense guaiacolization should be kept up for several months, suspending it for eight or ten days every three weeks.

A New Local Treatment for Erysipelas.

G. Lenox Curtis, in an article in *Med. Record*, states that he has derived very gratifying results from the external treatment of the disease by first cleansing the parts affected very thoroughly. A sufficient quantity of sodium sulphate is mixed with cold distilled water to make it of the consistency of a thick paste, the diseased part is covered with a single layer of the gauze or coarse cheese-cloth, and over this is spread a thick layer of sodium sulphate, care being taken that it extends considerably beyond the margin of the disease. Ice water must then be applied to the poultice to produce cold and moisture as well as to reduce the inflammation. He states that within six or eight hours, all the germs will have been destroyed.

TREATMENT OF ERYSIPELAS BY UNGUENTUM CREDÉ.

Max Stalber, as noted in *Med. Summary*, has used this ointment in erysipelas with success. The treatent consists in rubbing the ointment in with gentle friction over the affected and inflamed area. The rubbing should be continued for 20 or 30 minutes until the ointment is completely absorbed. Forty or fifty grains of the ointment can be used with each inunction for adults, and proportionate doses for children. The ointment contains about 15 per cent. of soluble metallic silver.

Spermatorrhea.

℞.	Cornutinæ citratis	gr. ii	12
	Ergotin	℥ii	8
	Ext. nucis vom	gr. v	30

M. Ft. capsule No. xl. Sig.: One capsule twice daily.

When spinal hyperesthesia is present:

℞.	Potassii bromidi	℥iv	16
	Tinct. hyoscyami	℥iv	16
	Tinct. nucis vom	℥ss	2
	Syrupi zingiberis	℥ii	64
	Aquæ camphoræ q. s. ad	℥iv	128

M. Sig.: One teaspoonful three times a day.—*Merck's Archives.*

Comparative Effects of Urotropin upon the Urine.

Dr. F. Suter, in *British Med. Journal*, has experimented with the following preparations in order to obtain some knowledge of their relative antiseptic properties upon the urinary tract: Benzoic acid 10 grains, boric acid 15 grains, salol 15 grains and 40 grains, and urotropin 15 grains. The preparation was administered at night and an examination was made of the first urine passed in the morning. The decomposition was retarded by several days only by large doses of urotropin and salol. It produces best effects in ammoniacal decomposition and is of value in disease of the prostate gland with consequent retention of the urine. It can be given in daily doses of 15 to 25 grains. It is not of great value in gonorrheal cystitis.

Treatment of Pneumonia.

Porter, in *Phila. Med. Jour.*, states that in his clinical work venesection is ordered as soon as the diagnosis is established. Usually from 8 to 12 ounces of blood will be sufficient. Immediately after this procedure, subcutaneous injections of salt

solution is administered. The solution is prepared according to Jenning's formula as follows:

R.	Sodii chloridi.....gr. xxx	2	
	Potassii chloratis		
	Sodii sulphatis, āā.....3i	4	
	Sodii phosphatis.....gr. xl	2	66
	Sodii carbonatis 3i	4	
	Aq. destil. q. s. ad.....ʒvi	192	

M. Sig.: Use one part of this solution to sixty of distilled water subcutaneously.

To Abort Pneumonia in Children.

Illoway recommends the following:

R.	Tinct. veratri viridis.....gtt. vi		36
	Tinct. aconiti rad.....gtt. ii		12
	Aq. destil.		
	Syr. tolutani, āā.....ʒss	16	

M. Sig.: One teaspoonful every half-hour for five doses, then a teaspoonful every hour.

To Relieve the Pain in Carious Teeth.

R.	Codeinæ sulph.....gr. ½		03
	Ol. caryophylli .....ʒss	2	
	Chloroformi .....ʒii	8	

M. Sig.: Soak a small pledget of cotton with the solution and place in the decayed cavity.

Gonorrhea in Women.

Dr. Marshall, in *Internat. Med. Mag.*, states that he has derived most satisfactory results in treating gonorrhea in women, from the use of tampons and pessaries. He advises against the employment of douches in these cases as being not only unsatisfactory but harmful, as douches may leave the cervix and upper vagina untouched. He prefers the pessaries made in one-inch test-tubes, of gelatin-glycerin as a basis. When ready for use the tube can be heated in hot water, when the pessary will slide out. This gradually melts when placed in the vagina. The active ingredient may be one of the following: Iodin ½ per cent.; ichthyol 2 to 5 per cent.; hydrargyri bichloridum 100 to 500; argonin 5 per cent.; lysol 2 per cent.; formalin 2 per cent. The best results have been obtained by him with iodin and ichthyol.

We should advise care in the use of formalin on account of the great tendency to irritate.

Medicolegal.

Eighty-five Hundred Dollars for Injury to Foot.—The Supreme Court of Washington holds, in the personal injury case of Uren vs. the Golden Tunnel Mining Company, that where a young man working in a mine had his foot mashed to such an extent that he had to have a portion of the bones of the foot removed, and, according to the testimony, was permanently maimed, it can not be said that a verdict in his favor for $8500 damages was excessive.

North Carolina Provisions as to Care of Insane.—The Supreme Court of North Carolina, in the case of the State Hospital at Raleigh vs. Fountain, interprets the law of that state as showing that it was the paramount purpose of the legislature to care for the indigent insane, with the proviso that the board of directors of an insane asylum may, if there be sufficient room, admit other than indigent insane persons upon payment of proper compensation, and allowing the directors to furnish private apartments, extras, or private nurses, if practicable, for the use and comfort of those patients who are able to pay for it. Nor does it consider the law as thus written in conflict with the state constitution. The constitutional declaration, as amended in 1879, that "the general assembly may provide that the indigent deaf-mutes, blind and insane of the state shall be cared for at the charge of the state," it holds empowers the general assembly, in its wisdom and discretion, to provide for the indigent at the charge of the state or otherwise, and, being silent as to the expense to be borne by those of sufficient property, it must be concluded that it was not intended that any requirement should be put upon the legislative department as to them. An indigent insane person it defines as an insane person whose property is insufficient to support himself and his family immediately dependent upon him.

Calling Physician as Witness a Waiver of Privilege.—The Court of Appeals of New York holds, in the case of Holcomb vs. Harris, that where, in an action against an executor, the latter called his testator's physician as a witness, and asked him a question calling for a disclosure of professional information, it was an express waiver of the provisions of section 834 of the Code of Civil Procedure, which forbids a physician to disclose necessary information acquired in attending a physician professionally, such as a legal representative is allowed to make by section 836 of the Code. It says that it is difficult to imagine a clearer act of waiver than for the legal representative of a deceased patient to call his former physician to the stand, and ask him to disclose professional information falling within the provisions of section 834 of the Code. Nor does it think that either court or counsel was misled in this situation, in this case, notwithstanding that the executor did not state in so many words that he desired or intended to exercise his right under section 836, as the other side contended that it was his duty to indicate.

Post-Graduate School Not Liable for Malpractice.—In the case of Collins vs. the New York Post-Graduate Medical School and Hospital, it appeared that the plaintiff, being ruptured on the left side, applied for admission to the defendant's hospital for the purpose of undergoing an operation, bringing with him a card from his own physician stating that fact, and giving the true location of the hernia. The house physician examined him and confirmed his doctor's diagnosis. The second day he was placed under the influence of an anesthetic, and the operation performed in the presence of the students, after a preliminary lecture to the class by one of the attending physicians. The operation was performed on the right side, which was in a perfectly healthy and normal condition, and the plaintiff was obliged to and did afterward submit to another operation at another hospital for the removal of the hernia diagnosed by his doctor. The surgeon who performed the operation on the wrong side had been subjected to a competitive examination before being accepted by the defendant's board of examiners, and, before that operation, was regarded by the defendant as skillful and competent. The defendant by its answer denied the negligence alleged, and asserted, by way of a separate defense, that its hospital was a charitable institution; that the medical and surgical attendance and ministrations furnished the plaintiff were furnished free; and that they were so accepted by him. True, he paid $8 weekly, during the four weeks he was in the hospital, but the testimony showed that was a charge made those able to pay it for room, board, nursing, medicines, dressings, and the services of the house staff—everything except a medical fee, nothing ever being charged for medical services, though gifts to the hospital might be made in lieu of payment of such fees by emergency patients. Under these circumstances, the second appellate division of the Supreme Court of New York holds that the complaint was properly dismissed. It says that, however opinions may differ on the question of the policy of exempting charitable institutions from the ordinary rule of respondeat superior, or "let the principal answer," the law is too well settled in that state to permit a recovery against the institution for the wrong committed by the surgeon who operated upon the plaintiff gratuitously. While the precise question does not yet appear to have been passed on by the court of appeals, it has been decided adversely to the right of action a number of times at the circuit and the general terms. It says, too, that many of the cases cited from other jurisdictions in harmony with this view are authority for the proposition that the fact that the institution receives pay patients does not change its status as a charitable organization. And it holds that the fact that the defendant charged tuition fees, and that the operations were a necessary incident to successful teaching, and that in that sense the defendant might be said to have been paid for the operation, did not change the relation of the parties to each

other. In the performance of the operation, so far as the plaintiff was concerned, the defendant was engaged solely in charitable work; and its corporation must therefore be regarded as a charitable institution, as to him, in that respect. When it had furnished a surgeon selected with proper care, and with no reason to believe him to be negligent or incompetent, it had fulfilled its duty, and, as it did not control him in the performance of the operation, it must be held free from liability for his want of care.

Practice in Another State—Good and Bad Diplomas.—When the case of the State of Kansas vs. Wilson was first before it, the Supreme Court of Kansas held that a person of good moral character, who had practiced medicine continuously for ten years or more before the taking effect of "An act to protect the people from empiricism, and to elevate the standing of the medical profession" (chapter 68 of the Laws of 1870; sections 2302, 2303, General Statutes of 1899), is deemed to be qualified and to have complied with the provisions; but continuous practice for ten years in violation of law, after the act was passed, confers no right or authority on the practitioner. And now it holds, on the second appearance of that case before it, that it is no defense to a prosecution under the act to prove that the person charged with unlawfully practicing medicine in violation of its provisions has been, since the passage of such act, continuously engaged in the practice of medicine for a period of ten years or more in another state, as, for example, in Nebraska. The contention on behalf of the defendant was that, having practiced without the state of Kansas during a period of ten years, he could not be said to be one who had been engaged "for ten years in violation of law." But the supreme court answers that, in the absence of proof to the contrary, it will be presumed that the laws of the other state referred to (Nebraska) are the same as those of Kansas. Besides, it says, it is known of all men that throughout the civilized world schools, colleges, dispensaries, hospitals, and institutions for clinical instruction are maintained at public and private expense for the education of those men and women to whom are committed the responsible duty of ministering to the health and endeavoring to prolong the life of human beings. All, or nearly all, of these institutions issue certificates or diplomas reciting the term and course of study which has been pursued by the student therein. And those colleges whose curriculum includes a complete course of those studies which are regarded as requisite for a physician and surgeon to pursue do uniformly issue to one who has completed such course, and exhibited proficiency therein, a diploma reciting such facts, and evidencing that by reason thereof the graduate has been made a doctor of medicine. Wherefore, the court makes a point of the fact that in this case the defendant did not claim to have attended any of these schools of special learning, nor claim that he had devoted any time to the study of any of the branches of this learned profession, nor avow that in Kansas or elsewhere he ever submitted to an examination before a board of competent members of the profession which he sought to follow, and the court holds that the purpose of the statute would not be carried out, and the evident intent of the legislature would not be given effect, by holding it sufficient that he had practiced in another state for more than ten years. In such a case as this, it devolves upon the defendant, the court holds, to produce evidence tending to show that he has attended two full courses of instruction and graduated in some medical college in this or some foreign country, or a certificate of qualifications from some state or county medical society, as such evidence is not accessible to the state, and is peculiarly within the defendant's knowledge and under his control. To this, the court adds that if the defendant should show, on the new trial, which it orders because the judge usurped the functions of the jury in practically directing it to return a verdict of guilty, that he had attended two full courses of instruction, and graduated in some medical college of this or some foreign country, then, in the absence of some evidence raising a question about it, the presumption would be that such college was respectable. To avoid misunderstanding, however, with reference to the facts of this particular case, it says that it thinks the trial court would have been justified, for reasons appearing on the face of the documents themselves, in excluding from the jury the paper, which counsel for the defense called a "diploma," issued by the so-called Independent Medical College of Chicago, and the other paper purporting to have been issued by a physio-medical society in Illinois (which latter was excluded), because neither of these papers proved, nor tended to prove, that the defendant had attended any course of instruction in either institution, or had graduated at either, and because neither of them can be regarded as a diploma, nor as such a certificate as is contemplated by the Kansas statute.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, April 20.

1 *The Early Diagnosis of Ectopic Gestation. Andrew F. Currier.
2 *The Use of Hot-water Vaginal Injections. James H. Burtenshaw.
3 A Case of Cystinuria Ending in Recovery. John Reid.
4 *Acute Spinal Ataxia (Non-tabetic), and its Relation to Other Forms of Acute Ataxia. Charles L. Dana.
5 Pathology of Intrauterine Death. (Concluded.) Neil MacPhatter.
6 Grippe, Pneumonia, and Insanity. Emile Aronson.
7 Notes on the Treatment of Diphtheria, Based on the Methods of the New York City Hospital. William L. Somerset.

Philadelphia Medical Journal, April 20.

8 *The Localization of Brain Tumors Especially with Reference to the Parietal and Prefrontal Regions. Charles K. Mills.
9 *Non-Surgical Treatment of Fibroid Tumors of the Uterus. Augustin H. Goelet.
10 Akromegaly, with Report of Two cases. W. G. Shallcross.
11 *A Clinical Note on Infantile Scorbutus. Wm. M. Mastin.
12 Susceptibility to Disease and Physical Development in College Women. Arthur MacDonald.
13 *Operative Treatment for Prostatic Hypertrophy. Ramon Guiteras.

American Medicine (Philadelphia), April 20.

14 *How to Deal with the Vermiform Appendix. Some Forms of Complicated Appendicitis. Howard A. Kelly.
15 The Good and Bad Effects Obtainable from Digitalis Used as a Therapeutic Agent. William Henry Porter.
16 Congenital Deformity of Wrist; Osteotomy of Radius. De-Forest Willard.
17 *The Logic of Hydrochloric Acid Therapy, Restoration of Lost Gastric HCl secretion by medical and Surgical Methods. John C. Hemmeter.
18 *Metatarsal Fracture. Carl Beck.
19 *Some Remarks on Inguinal Colostomy. William J. Mayo.
20 The Prevalence of Streptococci in Cow's Milk. D. H. Bergey.
21 Case of Congenital Form of Hernia of the Appendix Vermiformis in Conjunction with Cyst of the Canal. G. Childs MacDonald.

Boston Medical and Surgical Journal, April 18.

22 *The Opinion Evidence of Medical Experts. John D. Mc Laughlin.
23 The Umillian Murder. Herbert B. Perry.
24 Upon What Sort of Information Shall a Medical Examiner Hold a View? H. M. Culls.
25 *Leucocytosis and Typhoidal Perforation. Colin K. Russell.
26 Contusion of the Abdomen; No External Wound; Rupture of the Descending Colon; Fecal Abscess; Drainage; Suture of Ruptured Gut; Recovery. Charles L. Scudder.

Medical Record (N. Y.), April 20.

27 *The Toxemia of Pregnancy: Its Diagnosis and Treatment. S. Marx.
28 Faith Cures and the Law. John B. Huber.
29 Report of Three Cases of Malignant Endocarditis: One Following Measles, Another Typhoid Fever in a Child and Simulating Splenic-Lymphatic Leukemia, and another Terminating in Recovery. Albert E. Roussel.
30 *Strangulated Hernia in Infants; Description of a Hitherto Unrecognized Cause and Seat of Strangulation. Alexis V. Moschcowitz.

Medical News (N. Y.), April 20.

31 An Historical Sketch of the Department of Medicine and Surgery of the University of Michigan.
32 *Some Errors in the Examination of Urine. Louis Heitzmann.
33 Acute Traumatic Malignancy. (Concluded.) William B. Coley.
34 Epistaxis. Charles N. Cox.

Cincinnati Lancet-Clinic, April 20.

35 Some Truths in Medicine. Brose S. Horne.
36 Thoracoplasty. Hal C. Wyman.
37 Old-Time Practice. Geo. J. Monroe.

St. Louis Medical Review, April 20.

38 *Indications for Operation in Floating Kidney. G. Frank Lydston.
39 The Treatment of Diphtheria. W. L. Downing.

Post-Graduate (N. Y.), April.

40 Wounds and Injuries of the Eye. Edgar S. Thomson.
41 A Foreign Body in the Bronchus Contrasted with a Case of Incipient Tuberculosis. William Henry Porter.
42 Tecto-Colonic Enteroliths and Concretions. Samuel G. Gant.
43 Indications for Renewal of Plaster of Paris Jackets in Tubercular Spondylitis. Dexter D. Ashley.
44 Report of Clinics (Convergent Squint, Diseases of Children). St. John Roosa, A. E. Davis, and Dr. Caille.
45 Case of Cerebellar Abscess, the Result of Chronic Suppuration of the Middle Ear. D. B. St. John Roosa.
46 Notes from the Clinics. (Hernia). W. B. De Garmo.

American Journal of Medical Sciences (Philadelphia), April.

47 *Primary Splenomegaly. With a Report of Three Cases Occurring in One Family. N. E. Brill.
48 *Enteroptosis. James R. Arneill.
49 *Estimation of the Urinary Sulphates and of the Fecal Fat in the Diagnosis of Pancreatic Disease. David L. Edsall.
50 *Premature Infants. Vanderpoel Adriance.
51 Contribution to Study of Fatty Infiltration of Heart Secondary to "Subpericardial Over-Fatness." J. M. Anders.
52 *Multiple Neuritis and Hematorporphydrinuria Following the Prolonged Ingestion of Trional. Stuart Hart.

Canadian Practitioner and Review (Toronto), April.

53 A Case of Tic. R. D. Rudolf.
54 Tendon Transplanting in Paralytic Deformities. Clarence L. Starr.
55 A Comparison of Antiseptics. E. Ralph Hooper.
56 Clinical Experiences with Chloretone and Mercurol. C. E. Darche.

Physician and Surgeon (Detroit and Ann Arbor), March.

57 *Some Reflex Disturbances from Disturbed Pelvic Mechanism of Genital Dislocation. Byron Robinson.
58 *Diabetes Mellitus: A Study in Therapeutics. George Dock.
59 A Basis for the Study of Insanity. Hiram A. Wright.

A SYMPOSIUM ON ENDOCARDITIS.

60 Etiology and Pathology. William M. Donald
61 Symptomatology. William R. Chittick.
62 Diagnosis and Prognosis. George W. Wagner.
63 The Treatment. F. Lydston Newman.
64 *A Medicolegal Study of Euthanasia. Noah E. Aronstam and Louis J. Rosenberg.
65 Better Compensation for Local Health Officers. Henry B. Baker.

Northwestern Lancet (Minneapolis), April 15.

66 *Pancreatic Disease. H. L. Staples.
67 If Operative Technique be Perfect, Can Sepsis Occur? George C. Barton.
68 *Blood Examination in Surgical Diagnosis. A. Elton Williams.
69 Operations for Relief of Epilepsy. F. A. Dunsmoor.
70 Report of a Case of Erysipelas Treated with Antistreptococcic Serum. F. M. Archibald.

Cleveland Journal of Medicine, March.

71 Congenital Dislocation of Hip-Joint with Especial Reference to Lorenz's Bloodless Reduction. Walter G. Stern.
72 My Experience with Some of the Surgical Diseases of the Thyroid Gland. Aug. F. House.
73 Aortic Aneurysm. F. C. Herrick.
74 Some Proofs that Vaccination Prevents and Mitigates Smallpox. Charles L. Webster.
75 Syphilitic Disease of Facial Bone. C. A. Hamann.
76 Persisting Fetal Type of the Appendix. N. S. Scott.

Brooklyn Medical Journal, April.

77 *Pediatric Malaria. William A. Northridge.
78 *The Treatment of Club-Foot. Arthur H. Bogart.
79 *The Present Status of the Thyroid Extract in Therapeutics. Hiram Elliott.

Medical Summary (Philadelphia), April.

80 Meckel's Diverticulum as a Source of Intestinal Obstruction. J. F. Purviance.
81 Receding Diseases. Frank R. Brunner.
82 Comments on Gelsemium. Ralph St. J. Perry.
83 Some More Don'ts. D. H. Keller.
84 Camp and Hospital Life Under Red-tape Rule. C. W. Canan.
85 Is Malarial Hematuria Produced by the Administration of Quinin? B. P. Wilson.
86 Treatment of a Case of Tuberculosis of Left Lung in First Stage. S. D. Sour.
87 Good Health. Geo. J. Monroe.

Cleveland Medical Gazette, April.

88 *Nephritis and the Nervous System. Henry S. Upson.
89 Etiology of Chronic Non-Exudative Nephritis. S. L. Bernstein.
90 Prognosis in Chronic Non-Exudative Nephritis. Norman C. Yarian.
91 Treatment of Chronic Non-Exudative Nephritis. J. B. McGee.
92 Spontaneous Fracture of the Humerus Due to Sarcoma, with History of a Case and Presentation of Specimen. H. W. Quirk.

St. Paul Medical Journal, April.

93 *The Differential Diagnosis of Acute Febrile Diseases which may Simulate Typhoid Fever. Henry Jackson.
94 *Death from Drowning. Howard Lankester.
95 *A Report of 245 Cases of Anesthesia by Nitrous Oxid Gas and Ether. Alice Magaw.
96 *General Massage. Haldor Sneve.
97 State Sanatoria for Consumptives. H. Longstreet Taylor.
98 Erosions and Ulcerations of the Triangular Cartilage of the Septum. Jacob E. Schadle.
99 Suprapubic Cystotomy, Tenotomy of Tendo Achillis, Recovery. Oscar A. Fliesburg.

Peoria Medical Journal, April.

100 Nasal Hemorrhage in Septicemia. William Niergarth.
101 A Case of Aortic Aneurysm. B. M. Stephenson.
102 Considerations Relative to Typhoid Fever. H. H. Fletcher

Canadian Journal of Medicine and Surgery (Toronto), April.

103 Some Successful Cases of Operation at the Samaritan Hospital, Montreal. (Ventrofixation, etc.) A. Lapthorn Smith.
104 *Experiments in Climatology—The Tropical Winter. Ezra H. Stafford.

Occidental Medical Times (San Francisco), April.

105 *The Report of the Government Commission on the Existence of Plague in San Francisco.
106 Address, San Joaquin Valley Medical Society. W. J. Maupin.
107 *The Etiology of the Skeletal Deformities of Rachitis. Harry M. Sherman.
108 Eye-Strain. L. E. Felton.
109 The Tuberculin Test. F. E. Twining.

American Medical Compend (Toledo, Ohio), April.

110 Hemorrhage After Removal of the Ovaries and Tubes; Malignant Disease of the Uterus; Pyosalpinx and Hydrosalpinx with Fibroid Uterus. E. E. Montgomery.
111 Gynecology—Its Range. Byron Robinson.
112 Sudden Profuse Hemorrhage Before the Birth of the Child and the Manner of Treating it, with Report of Three Cases. H. E. Noble.
113 The Treatment of Cystitis with Aminoform. W. W. Grube.

Merck's Archives (N. Y.), April.

114 Therapeutics of Ipecac. W. H. Blake.
115 *Atropin in Algid, Pernicious Malarial Fever (Congestive Chill). I. L. Van Zandt.
116 *Scalds and Dry Burns. A. D. Blinkerd.
117 An Essay on Opium and its Alkaloid Morphin, and Their True Value in Modern Therapeutics. Adolfo Luria.

Illinois Medical Journal (Springfield), March.

118 *Chronic Inflammation of the Tear Passages. Willis O. Nance.
119 *Rheumatic Diseases of the Eye. H. W. Woodruff.
120 Sympathetic Ophthalmia, with Reports of Cases. A. L. Adams.
121 Pneumonia. W. S. Caldwell.
122 *Relation of the Physician to the Public Schools. K. Miller.
123 *Mental Overwork and Lack of Interest in Physical Development and Hygienic Care of School Children a Menace to the Future of the Race. E. A. Edlen.
124 Diet, or Some Phases of it that Our Forefathers Did Not Have to Meet. W. J. Eddy.
125 Slight Ailments. L. L. Leeds.

Medical Herald (St. Joseph, Mo.), April.

126 *Intubation of the Larynx as an Emergency Operation. F. E. Sampson.
127 Treatment of Cancer by Escharotics. Chas. Ott.
128 Malaria and Mosquitoes on the West Coast of Africa. Hans Ziemann.
129 Hydrophobia—Report of a Case. A. Herring.

Alabama Medical Journal (Birmingham), April.

130 The Use of Forceps in Childbirth. Hugh Boyd.
131 Use and Value of Proprietary Medicines. S. M. C. Howell.
132 *Some Unusual Reflexes Resulting from Lacerations of the Cervix. W. G. Harrison.
133 *The Duration of Life. R. C. Bankston
134 Acute Uremia Successfully Treated with Intravenous Saline Solution. J. M. Mason.
135 Vaccination in Alabama—What Does it Prove? W. H. Sanders.
136 Hypertrophic Elongation of the Cervix Uteri, with Complete Eversion of the Vagina from Fibroid Tumor of the Cervix. Restoration by Supravaginal Amputation of the Cervix and Inversion of the Vagina. George Henry Noble.

Denver Medical Times, April.

137 Neglect of a Great Opportunity for the Advancement of Medicine and Surgery in Denver. Henry Sewall.
138 Thoughts Suggested from an Attendance at the Pan-American Medical Congress. T. A. Stoddard.
139 Bad Effects (?) Following Vaccination. E. P. Hershey.
140 A Visit to Padua and Bassini. R. W. Corwin.
141 Amblyopia from the Use of Wood Alcohol. Edward Jackson.

Memphis Medical Monthly, April.

142 The Metric System in Prescription Writing. Wm. Krauss.
143 *Follicular and Periurethral Abscess in the Male. William F Bernart.
144 Urban Sanitation with Special Reference to the City of Memphis. Edwin Williams.
145 Suburban and Village Sanitation. B. F. Turner.

146 Adenoid Vegetations of the Nasopharynx and their Removal. George S. McReynolds.
147 *Shall We Use Quinin in So-called Malarial Fevers? J. M. Williams.
148 A Case of Endocarditis, Terminating in Embolism of the Cerebral, Pulmonary and External Iliac Artery. Robt. W. Tate.

AMERICAN.

1. **Ectopic Gestation.**—The symptoms which determine the diagnosis of tubal disease may be divided into ordinary and extraordinary. The ordinary ones are those of usual pregnancy at different periods. The absence of one of more of these, however, may mislead the physician. The point which Currier wishes to make is that when gestation occurs normally or abnormally it causes certain changes in the tissues, and a general condition characteristic of the pregnant state. These should be carefully sought. There are certain conditions which seem to predispose to tubal gestation and their etiologic importance should be considered when arriving at a diagnosis, such as retroflexion, precedent sterility, diseases or dislocation of tubes, bicornate uterus, previous tubal gestation, etc. These are noticed in detail. The most important of the extraordinary signs is hemorrhage. It is seldom externally manifest. It is most likely to occur and occurs most early if the seat of the ovum is in the fimbriated extremity of the tube, and is less likely to occur when it is near the middle. In the first case it rarely progresses to the end of the first month without rupture, and hemorrhage is frequently fatal. The comparative absence of tumor may mislead the physician, so that he may temporize until it is too late. In any other portion of the tube rupture is usually observed between the sixth and twelfth week and the signs of such tumor would usually exclude the fimbriated or terminal variety. It does not necessarily imply the complete rupture of the fetal sac with escape of its contents, but may be simply rupture of the blood-vessels and distended tissue. The signs of hemorrhage from tubal rupture are not easily mistaken, the weakness of collapse, flickering pulse, the pinched face, and the shallow breathing can have but one significance. Next to hemorrhage the most important extraordinary sign is pain, which is usually paroxysmal, sharp and darting, often associated with hemorrhage, though not always. The third sign is tumor, which is usually best determined by examination per rectum, the thighs being flexed upon the abdomen, and anesthesia is necessary in most cases. The passing of decidua by the vagina, uterine hemorrhage, etc., are of minor importance. In many cases the surgeon is not called until it is too late, and Currier doubts whether operation is justifiable, as a rule, in extreme cases, except as it is understood to be only a last resort. The diagnosis of tubal gestation is not always conclusive even when the abdomen is opened, tumor of the tube discovered and blood found. The case is not one of tubal gestation unless the fetus is found within or without the tube or a microscopic examination of the mucosa reveals the presence of decidual cells.

2.—See abstract in THE JOURNAL, XXXV, p. 1572.

4. **Acute Spinal Ataxia (Non-Tabetic).**—The summary as given by Dana, of his article, is as follows: Acute ataxia occurs occasionally in tabes dorsalis, but is associated usually with characteristic symptoms. Acute non-tabetic spinal ataxia occurs as a manifestation of spinal syphilis or senile arterial changes, and shows itself by a sudden onset of temporary motor weakness and bladder troubles, great ataxia, and minor sensory disorders. It may affect only one extremity, but usually affects the lower limbs. The tendency is to nearly complete recovery. Acute bulbar or bulbocerebellar ataxia occurs as a sequel of some acute infection, and is usually the beginning of a form of multiple sclerosis. Acute neuritic ataxia occurs as the results of multiple neuritis of the sensory type. It is seen usually in the non-alcoholic forms of neuritis, especially those due to metallic poisons, like arsenic, or to diphtheria.

8. **Brain Tumors.**—From a number of cases here reported Mills deduces the following: The diagnosis of the existence of a brain tumor can sometimes be made even in the absence of most of the general symptoms, such as optic neuritis, headache, vertigo, and vomiting, chiefly by the close study of localizing and invasion symptoms. Emotional states, even hysterical stigma, are sometimes present in cases of brain tumor, and must not be given too much weight in differential diagnosis. Tumors of the posteroparietal region, and especially of the superior parietal lobule (parietal of Wilder), give as their most important localizing symptoms disorders of cutaneous and muscular sensibility, and especially astereognosis; other symptoms often present in such cases are the result of compression or invasion of adjoining regions. Tumors and other lesions implicating the angular gyre, and the regions adjoining (the subparietal, first temporal and mediooccipital convolutions, give as their main localizing symptoms word deafness and word blindness, with the usually accompanying speech disturbances, lateral homonymous hemianopsias and disorders of cutaneous and muscular sensibility, including astereognosis. Although it is possible that these disorders of sensibility in the case cited may have been dependent upon invasion of the superior parietal lobule. Just as the centers for hearing, vision and speech are more highly differentiated in the left hemisphere, so it is probable that the stereognostic sense is more highly evolved in this hemisphere. A tumor strictly confined to the motor regions does not give objective sensory phenomena of a persisting character; the localizing symptoms of a growth so situated are motor, chiefly paralysis and monospasm, with also exaggerated deep and superficial reflexes. In tumors of the motor subcortex tonic spasticity is usually a marked symptom. Paresis or paralysis, and exaggerated reflexes, with monospasm or unilateral convulsions, may also be present. Tumors of the prefrontal region, by which is meant the region entirely cephalad of the motor zone, chiefly give psychic symptoms of an especial character; when the tumor is situated on the left side, motor agraphia (or orthographia) and motor aphasia are usually present because of the compression or invasion of the posterior portion of the second frontal and of the third frontal convolutions; paralysis and other motor symptoms are often present late because of encroachments upon the motor region.

9. **Uterine Fibroids.**—The class of tumors where non-surgical treatment may be supposed to suffice are fibroids and myomatous growths of the interstitial variety, which have not obtained sufficient size to cause the uterus to rise in the abdomen above the umbilicus. Goelet believes in active measures in the arrest of these growths, even when they give no marked symptoms though non-surgical treatment may be a necessary alternative when operation is refused. He thinks that electricity in its various forms may have a certain palliative effect, and some observations have led him to believe that the moderate-sized interstitial fibroids may disappear under the influence of electricity aided by such remedies as iodin, ergot, etc. In this latter respect he has changed his views formerly expressed.

11. **Infantile Scurvy.**—Several cases of infantile scurvy illustrating the troubles of diagnosis, etc., are reported by Mastin. They show that the errors in diagnosis are not confined entirely to rheumatic affections, but may involve the incorrect diagnosis of surgical disorders, tubercular bone lesions, etc., spinal diseases and even hereditary syphilis. They also show that scurvy may arise during the use of several of the most popular artificial or prepared foods, and in addition that it occurs in the use of sterilized milk.

13. **Prostatic Hypertrophy.**—Guiteras believes the Bottini operation the one of choice where there is damage to the kidneys, while prostatectomy may be performed with healthy kidneys, and if the prostate is of a large size, as felt per rectum. He describes the technique of the Bottini operation, and also a method of prostatectomy by perineal enucleation, which he thinks is of great value. The bladder is first washed out with boric acid solution, through a catheter allowed to remain *in situ* and plugged when the bladder has been well distended and pushed up to avoid perineal folds. The abdominal wall having been cut through above the symphysis, the fingers of the left hand are thrust into the prevesical space where the prostate can be felt between them. The plug is now removed from the catheter. The fluid drawn off, the bladder collapses, after which the catheter is withdrawn. A staff is now introduced through

the urethra, a perineal urethrotomy performed, the membranous urethra being cut through the apex of the prostate at which point the prostatic capsule is incised. The forefinger of the right hand is inserted between the capsule and the gland and enucleation commenced, counter-pressure being brought to bear by the index and middle fingers of the left hand in Retzius's space. Having thus enucleated the prostate, control of the gland by the fingers is almost as complete as if it were in the bladder. After the lobes have been enucleated through the perineal opening, a large perineal tube should be pressed up into the bladder, and drainage kept up for three weeks or more. This avoids a suprapubic opening, which is less simple and more dangerous. The after-treatment consists in an enema of a pint of hot saline solution at 120 F., to be retained, administration of 1/30 gr. of strychnia, and the application of hot bottles to the feet; all this for shock. After the patient comes out from under the effects of ether, a little hot water, soup or bouillon should be given, and water pushed *ad libitum*. Strychnin should be given every four hours hypodermically, and it is well to repeat a hot saline enema every four hours with bouillon or water by the mouth. It is well, before and after the operation, to give a urinary antiseptic, and a diet of milk up to two or three quarts a day. The bowels should be moved by some saline water on the second day.

14. **Appendicitis.**—Kelly recommends the cutting off of the appendix at its base in cases where it is diseased and densely adherent at its tip. The distal freed portion is wrapped for protection in a bed of gauze, while the opening in the bowel is sewed up and is later dissected out of its bed with much greater facility than when both ends are anchored. This is especially the case when it is attached to a pyosalpinx or ovarian or fibroid tumor. When it is imbedded in strong old adhesions, he detaches the organ at its base and catches the free end with a pair of artery forceps and circumcises it just below the forceps, going through the peritoneal and external muscular coats. A longitudinal incision including only these two coats may also be carried down the dorsum as far as visible, and the appendix is now stripped out of its bed by pulling it out; if it begins to break, it is grasped again by the forceps and stripping continued. There is often no bleeding, and when there is, it is easily managed. When the end of the appendix enters an abscess cavity surrounded by adherent intestines which can not be stripped off with safety, he has grasped the appendix close to the abscess, with a pair of forceps on either side, then split it open and followed its lumen as a guide by using a grooved director and pair of open scissors with one blade in the appendix. In this way he has been able to reach the abscess and open, clean it out and sterilize it without doing any damage to the intestines.

17. **Hydrochloric Acid Therapy.**—Hemmeter holds that the supplementing of HCl in deficient secretion is rational, even if we can not supply the deficit, because the amount necessary thereto could not be expediently administered. If we can not give sufficient HCl to make the chyme distinctly acid, we can at least add enough to exert a disinfecting influence and free it from a part of its germs, and perhaps produce some of the preliminary stages to peptone. He reports the case of a physician who suffered from extensive stomach dilatation with absence of HCl, which was unimproved by treatment until the operation of gastroplication was performed. This was done successfully and then free HCl was detected after the test meals. The glandular layer had not been destroyed by the disease, but the peptic cells had simply been exhausted, and when this condition was remedied and the normal amount of functions restored their normal secretions was recommenced.

18. **Metatarsal Fracture.**—After first calling attention to the probable nonrecognition of many cases of this condition and the symptoms of neuralgia, metatarsalgia, etc., that may follow, Beck points out the different methods of treatment for the different forms of this fracture. If there is no displacement present in the fracture of any of the second, third or fourth bones, simple plaster-of-Paris dressing meets all the requirements, the patient being kept in bed the first week, and later a solid plaster-of-Paris dressing from the toes up to the lower third of the leg being used. If the first or fifth metatarsus is broken and no displacement is noticeable, a small strip of moss-board, slightly moistened, is placed alongside the outer or inner margin of the foot before the plaster-of-Paris dressing is applied. The ambulatory dressing should not be chosen for this type before two weeks. If there is displacement of the second, third or fourth metatarsal bone in either direction, up or down, pressure will usually reduce the fragments and they are easily kept in place by co-aptation splints, preferably also consisting of moss-board and protected by plaster-of-Paris dressing. If the displacement, however, is sideways, the reduction is somewhat more difficult. It is best accomplished by grasping the fragments as firmly as possible near their epithelial ends and alternately turning and shifting them until reposition is perfect. Sometimes considerable counter-pressure is required. To hold them in place is still more difficult and there is danger of consolidation between the bones with functional impairment. Experience has taught him that metacarpal fragments are invariably held in place by elastic pressure. The same principles apply to metatarsal fracture. He therefore uses rubber drainage-tubes of moderate size lightly pressed into the adjoining interosseous space at the dorsum, so that they fill them up to a certain extent. These are kept *in situ* by adhesive plaster strips, and recurrence of displacement is prevented. The dorsum is surrounded then by a moss splint which adapts itself to the foot like a cast. Plaster-of-Paris dressing is then used, reaching from the toes to the lower third of the leg. The patient then remains in bed for ten days, after which ambulatory dressing is applied. When skiagraphed through the plaster-of-Paris dressing, the displaced fragments must be found in exact position. If not they must be replaced and redressed. He thinks that with this method, metatarsalgia and its companion affections will become very rare.

19. **Inguinal Colostomy.**—The following are the conclusions of Mayo's article: 1. Colostomy is not now a rival of excision of the rectum for malignant disease, and should only be employed in hopeless cases presenting obstructive phenomena. 2. For a permanent colostomy, the combination of Wyeth and Bailey's methods gives a satisfactory result. 3. Colostomy preliminary to excision of the rectum should be located high on the colon to give sufficient length of sigmoid to permit restoration of the continuity of the bowel. 4. For ulceration and other conditions in which the upper limit of the disease is not definitely known, the interior of the bowel should be explored through the inguinal incision in order to determine the proper site of the opening. 5. Right-sided colostomy has an increasing field of usefulness, as in amebic dysentery, chronic colitis, etc.

22. **Opinion Evidence.**—McLaughlin reviews the methods of opinion expert testimony here and abroad, and while he does not recommend the adoption of continental methods, he thinks the reform must be to make the expert the partisan of neither side and that we should go back beyond the common law to Roman jurisprudence for the principles to follow.

25. **Leucocytosis and Typhoid Perforation.**—A number of cases are reported by Russell, from which he deduces the following conclusions: That leucocytosis occurs in perforation, but in widely varying degrees, and that the leucocytes, while appearing as a rule early, may not be at all marked until general peritonitis and collapse have supervened. There may be an utter absence of leucocytosis with marked perforation and peritonitis. The cells may be lower than normal, and with typical signs of perforation and a definite leucocytosis there may be no such complication present. Leucocytosis to a marked degree may occur in other complications, such as bronchitis, cholecystitis, etc., but with pain and tenderness, however, in the abdomen, coming on suddenly during typhoid, and in the absence of cholyecystitis or other definite complications, a distinct leucocytosis, even without other symptoms of perforation, an exploratory operation is justifiable and advisable.

27. **Toxemia of Pregnancy.**—Marx's conclusions are as follows: 1. Toxemia of pregnancy is a complex condition depending on more than one factor. 2. Many women go to term with albuminuria, without symptoms referable to toxemia.

When such symptoms arise they are not caused by the albumin present, but by faulty urea secretion. 3. In the most desperate and malignant cases there is found neither albumin nor casts. 4. Urea is always found markedly diminished in the so-called true toxemias of pregnancy, or urinemias. 5. There should be a regular and methodical course of urea estimation in all cases of toxemia, or the relegation to secondary importance of the time-honored examination for albumin. 6. Progressive diminution of urea excretion, with or without albuminuria, is the sole indication for the induction of premature labor, which is especially indicated when conscientious medical treatment fails.

30. **Strangulated Hernia in Infants.**—Moscheowitz reports two cases which he thinks represent a hitherto unrecognized cause and seat of strangulation, viz., in the descent of the testicle the processus vaginalis may begin the shutting off of the normal tunica vaginalis, but the process may stop before it is entirely completed. The result will be a sac of the usual congenital variety, but constricted in the lower portion. He finds a case which appears to indicate this possibility, reported by Russell, and which seems to corroborate the findings in his own case here reported, though he has not found anything in the literature which positively thus accounts for the occurrence of this form of strangulation low down in the scrotum, which appeared in his case.

32. **Urinary Examination.**—Some errors in urinary examination are noticed by Heitzmann, such as assuming too much importance from the presence of albumin, which may be only a sign of the presence of pus corpuscles. A microscopic examination should be employed in addition to this test and this is not less important than the chemical examination. Hyaline casts are often described as being present when they are not; they are simply cylindroids or mucus-casts, that is, mucous threads resembling casts, which may be derived from any portion of the genito-urinary tract, and entirely independent of nephritis. Granular casts are often diagnosed from conglomeration of harmless bacteria on mucus. He also thinks the use of the centrifuge is productive of errors in this way. The diagnosis of nephritis does not necessarily depend upon the presence of casts; pus-corpuscles, red blood-corpuscles, and kidney epithelia are sufficient. The latter are never voided in healthy individuals, and if care is taken to look for pus-corpuscles, which are always the smallest granular corpuscles, mistakes can not be made.

38. **Floating Kidney.**—Lydston protests against indiscriminate operation in movable kidney, and advises a more conservative attitude. If the psychic disturbance in exceptional cases is such as to warrant operation, he believes that the operation of splitting the fibrous capsule, separating it from the cortex in such a manner as to fashion three or four triangular flaps to be stitched to the margin of the wound, with subsequent packing of the wound for three or four days with iodoform gauze and permanent suture on the removal of the latter, will give the most satisfactory results.

47. **Primary Splenomegaly.**—Three cases of enlarged spleen occurring in one family, and all in the same generation, have been under Brill's observation for fifteen years. There was enormous enlargement of the spleen and liver accompanied with profuse perspiration, tendency to hemorrhage, discoloration of the skin, conjunctival thickening, and nevertheless a comparative well-being and general comfort which does not seem to correspond to the condition. The cases can be easily distinguished from splenic anemia. The author does not attempt to give a thorough explanation of the condition, but suggests that it is a peculiar form of family disease characterized by enlargement of the spleen. When the physiology and pathology of the spleen becomes better known the pathology of these cases may be explained.

48. **Enteroptosis.**—According to Arneill this is an extremely common condition, seldom recognized or examined for by the average doctor, but a better knowledge of which will be of great worth to the profession and of untold value to suffering women. He describes the methods of examination, including palpation and auscultation, and use of the acid and soda method of gastric dilatation with which he has been rather successful. He gives tabulated statistics of 80 cases, 69 women and 11 men. In 28 of these there was a high degree of gastric dislocation, the entire organ lying below the umbilicus. In 41 the prolapse was of a moderate degree. In a few cases there was both dislocation and dilatation. The stomach contents were analyzed and the blood examined in a number of cases. The symptomatology was extremely varied. In a few there were no symptoms other than loss of weight, strength and "just run down." In a much larger proportion nervous symptoms predominated, a depressed, excitable state with irritable and hysterical phenomena, often with palpitation. Some patients were nervous wrecks, and in another group there were, in addition to the neurasthenia, derangements of the kidneys and gastralgia. In nearly all chronic constipation and sick headache were constant symptoms. In most cases there were uterine displacements and some had mucous colitis, probably secondary. He thinks that there is no etiologic connection between enteroptosis and chlorosis. Gastric subacidity was more often present than hyperacidity. He considers congenital predisposition important, but not the direct cause: child-bearing, constipation, etc., are mentioned. As regards the prognosis and treatment the statements must be guarded. Operation is advisable in cases accompanied with hydronephrosis and Dietls' crises where we have purely mechanical disturbances resulting from kinking or twisting of the kidney vessels, which could occur only when this organ was dislocated. Abdominal bandages may help in some cases, and where the stomach symptoms are prominent, gastric lavage and the use of hydrochloric acid are useful if there is subacidity. Exercise and massage of the abdominal muscles are of great value, but seldom satisfactorily carried out. Tincture of nux vomica has been of great value in many cases. There must be a great deal of individualizing in the treatment of the condition.

49. **Pancreatic Disease.**—Edsall reports two cases which seem to indicate that the reduction of ethereal sulphates may be a sign of value in the diagnosis of severe disease of the pancreas. This is not, however, conclusive, he thinks, and from a review of the literature he considers the test likely to be only an inconstant aid in the diagnosis and to be of real value only when positive. Even the positive results of the test would not always be conclusive since all varieties of ethereal sulphates have been observed as a result of hyperacidity, diarrhea, etc. He would not say, however, that it is entirely worthless. As to the importance of fatty stools in the diagnosis of pancreatic disease he considers the general clinical teaching that they are an indication of the condition. He quotes Osler's conclusions to the contrary effect and points out that Walters and others have demonstrated definitely that fatty stools can be seen in most cases of icterus in which the pancreas is entirely uninvolved. A case is reported as bearing on this point.

50. **Premature Infants.**—Adriance gives the characteristics of premature infants, their defective organism, difficulty of raising them, and the indications in their treatment. The greatest task is the maintenance of animal heat and only careful watching and great attention to details will succeed. The incubator alone can not be relied on; we should have as nearly as possible the conditions experienced *in utero*. Every effort must be made to assimilate this environment. If possible it would be better to forbid any disturbance whatever, but the matter of toilet demands a certain amount of handling; the simpler the clothing, the fewer the pins, the less the manipulation the better. The food should be given in very small amounts. A weak digestible food with special precautions against overtaxing the stomach is the best. The mother's milk can not be depended on, but a wet-nurse should be secured who has had a healthy infant at full term, at least two weeks, or better a month old, so that the characteristics of the colostrum period may be lost in the milk. The weight should be recorded at rather infrequent intervals on account of the disturbance that might be produced. The attacks of cyanosis should be promptly treated by administration of oxygen and minimum doses of whisky, and if they seem to be caused by

the food finding its way into the larynx it should be promptly removed by inverting and patting the back. Small doses of castor-oil are necessary to prevent fecal stagnation in the intestines.

52. **Trional.**—Hart reports a case of trional poisoning in which the amount given was apparently not excessive, viz., 450 gr. during two months. The symptoms were at first those of gastrointestinal poisoning. Following this was an acute degeneration of the kidneys, and hematoporphyrinuria. The first of the nervous manifestations were neuritis of the vagus and subsequent trophic disorders of the heart muscle resulting in dilatation and valvular insufficiency. With improvement in the muscle tone these last disappeared, leaving a normal heart. Trophic changes such as extreme emaciation and marked thickening about the joints of the fingers persisted after recovery. The possible fatal effects should be kept in mind. Several cases from the literature are noticed. Hart is inclined to favor the theory that disturbance of the function of the kidney was secondary to changes in the nervous system, as the urinary changes did not appear until some time after the development of nervous symptoms, and probably after elimination of the drug. The cumulative action of trional as shown by Marro is remarked upon; it should not be given continuously and the bowels and kidneys should be kept active during its use.

57. **Genital Reflexes.**—Robinson describes the sympathetic nerves of the female genitals and calls attention to the reflexes which occur from their dislocation. He specially mentions the stomach reflexes, asthma, cough, etc. The general treatment, he thinks, must be long continued and systematic, and local treatment of the skin, bowels and kidneys employed. We should use vaginal douches, gradually increasing in heat to the bearable point, and employ the boroglycerin tampon three times weekly. It may take a long time to accomplish a permanent result, but the future of medicine depends on physicians accomplishing more by non-surgical methods. The universal rule is now to sacrifice only hopelessly diseased tissue.

58. **Diabetes Mellitus.**—Dock remarks in regard to the tests for sugar, and thinks that the copper reduction tests should not give as much trouble as they do, though they have many sources of error. A control test is, therefore, indicated, and he prefers the phenyl-hydrazin test. The directions given in the text-books are unduly complicated. He finds satisfactory the method used in Ultzmann's poliklinik and recommended by Williamson, viz., putting phenyl-hydrazin hydrochlorate and sodium acetate into a test-tube to the height of .5 centimeter each and filling the tube one-third with the urine to be tested, boiling to dissolve the reagents, repeating the boiling several times; then allowing the tube to stand fifteen minutes and examining the sediments in the usual way. As a further control, and as a convenient, and for clinical purposes a sufficiently accurate quantitative test, he uses the fermentation method. The determination of the presence of sugar, however, is only the beginning of the study of diabetes. The further details of carbohydrate metabolism, the relation of the glucose excreted to carbohydrates ingested and the existence and amount of glucose in serious cases independent of carbohydrates, must be known. We should watch for the appearance in the urine of such substances as acetone, diacetic acid, etc., which indicate intoxication foreboding diabetic coma; and for diacetic acid the ferric chlorid reaction of Gerhardt is fairly useful. For oxybutyric acid there is no easy method suitable for the purpose, but one will probably be found. It is important in all cases to use the Gerhardt test. All organs of diabetics must be thoroughly investigated at the beginning and at frequent intervals, always with the thought that the whole metabolism of the diabetic is different from that of normal man. The prognosis must always be guarded, the patients are obliged to avoid nervous strain, and regular habits of life and diet are important elements. The treatment, if there are no symptoms requiring medication, may be purely dietetic and should be arranged on the ground of carbohydrate tolerance, the idea being to give as much carbohydrates as may be assimilated without damage. The diet is of much wider range than formerly, and mild cases can frequently get along with 100 grams of bread or its equivalent without discomfort. Fat in all forms, cheese, etc., are of value. A good rule before prohibiting or ordering any food is to ascertain the amount of carbohydrate contained to the proportion to be used.

64.—This article appeared in THE JOURNAL of January 12, p. 108.

66. **Pancreatic Diseases.**—Staples describes the symptoms of disease of the pancreas and holds that many cases loosely diagnosed as dyspepsia, biliousness and liver disease, and some of the cases diagnosed as chronic appendicitis, are really cases of pancreatic disease.

68. **Blood Examination in Surgical Diagnosis.**—The conclusions of Williams's article are, in substance, that the leucocyte count in inflammatory diseases is not reliable for determining the presence or absence of pus. It is of value: 1, in arriving at a preliminary diagnosis; 2, in prognosis; 3, as a guide to the course of pathologic or healing processes. The red count and hemoglobin estimation and observation of the character of red cells are often of value to the surgeon. The study of stained specimens is occasionally of value. Undue reliance upon special methods of diagnosis should be avoided, but it is incumbent on every practitioner to carefully observe and regard the progress of blood examinations in relation to diagnosis and prognosis.

77. **Pediatric Malaria.**—Northridge points out that the malarial germ, when it attacks a young child, produces different symptoms from those in the adult, as a rule. The quotidian instead of the tertian is the more common type, chill is often not readily detectable, the sweating stage is often absent or very slight, and the nervous system is especially liable to be affected, which is not the case with the adult. The older the child the more nearly do the phenomena approach the adult type, while the converse is also true. In infantile diseases where the diagnosis is in doubt and fever and periodicity are present, the presence of the hematozoon should be suspected. Quinin is the specific remedy, arsenic is next. Children bear both of these drugs very well.

78. **Clubfoot.**—Bogart believes in manipulating to relieve clubfoot, rather than in extensive operations, other than tenotomy of the tendo Achillis. He advises careful preparation of the part, as if it were to be a general operation, overcorrection and fixing by plaster-of-paris. He is satisfied that reduction by manual force readily applied, and retention by plaster-of-paris, is the best method, and when we add to this tenotomy of the tendo Achillis, and subcutaneous division of the plantar fascia, the great majority of cases can be satisfactorily treated and permanently cured. The open incision and tarsal resection and osteotomy he would reserve for those extremely rare cases which can not be corrected by other means. He doubts whether these occur under 12 years.

79. **Thyroid Extract.**—The experience with thyroid extract, reported by Elliott, leads him to sum up by saying that thyroid extract is a powerful alterative, possessed of some toxic properties, which may disappear under better methods of obtaining the drug. It has specially proven itself to be of value in the treatment of insanity, in those cases that are curable after the acute symptoms have passed away and there are beginning signs of chronicity. In other words, we should administer thyroid late rather than early in mental disorders.

88. **Nephritis.**—Upson discusses the relations of nephritis to certain symptoms, and believes that uric acid is the substance appearing in the urine which seems to be in close relation with nervous diseases, especially functional ones on the one hand and organic kidney diseases on the other. The relationship is a complicated one, the most of its problems still to be solved.

93. **Diagnosis of Typhoid.**—The febrile affections which may simulate typhoid, enumerated by Jackson, are febricula, which explains itself by its short duration, malaria, that may give difficulty in its estivo-autumnal type, and general tuberculosis, of all perhaps one of the most embarrassing forms, and in regard to which he says a case of continued fever with pros-

tration and rapid pulse and absence of Widal reaction should always arouse the suspicion of some hidden focus from which the agent of tuberculosis has invaded the system. Pneumonia may also run a rather latent course and the diagnosis may be difficult when lobar pneumonia complicates the early stages of typhoid. Cerebrospinal meningitis is another disease which, as is well known, may give rise to difficulty. Typhus fever is mentioned, and especially septic conditions, including those connected with appendicitis. Malignant endocarditis is possibly equal in importance to general tuberculosis in the differential diagnosis of typhoid fever. Its initial symptoms are often obscure and indefinite, the pulse is rapid, chills are frequent, but are combined with leucocytosis, which is not the case with uncomplicated typhoid. The physical signs from the heart may determine the diagnosis. Petechiæ occur in about one-third of the cases, and may be a clinical phenomenon to clinch the diagnosis of doubtful cases of typhoid with cardiac murmurs. The Widal reaction is not reliable in the early stages of the disease, and may not always be available, but leucocytosis occurs in all forms of sepsis and is available before the positive Widal reaction.

94. **Drowning.**—Lankester holds that death from drowning rarely occurs from asphyxia, and it is not scientific to say that the victim died of cramps or convulsions. In all probability he met his death from the absorption of some uneliminated material which may or may not have been formed partially or wholly during his immersion. The water is merely a mechanical factor in the process, not the direct cause, apart from the fact that it brought about faulty elimination, hence the failure to resuscitate the patient. So-called drowned people do not come to their death, except in a few cases, by water acting in a mechanical manner, hence resuscitation in these cases of so-called accidental drowning after prolonged immersion is so rare, while in those who have simply fallen in and the lungs have not become damaged by the churning of the liquid, it is the rule. This question of toxins is merely a theory, but he thinks it is the best explanation of death by drowning.

95. **Anesthesia.**—Magaw advises the use of nitrous oxid and ether in combination as having the following advantages: The initial excitement is avoided, which is a great comfort to the patient. The time for producing anesthesia is also considerably shortened and the amount of ether required greatly diminished.

96. **Massage.**—After describing the various methods of massage, together with the Swedish movements in the beginning of the treatment, Sneve says that its physical effects are generally increased metabolism in all the tissues, increase of the temperature temporarily, frequency of respiration, body weight, number of red blood-corpuscles, increase and changes in the character of the urine; toxic substances are set free for elimination, and it is of special value in improving mal-nutrition from any cause. To relieve insomnia, prevent atrophy, hasten convalescence, favor elimination and as a reconstructive it is also of value. It is useful in diseases of the blood, such as anemia and chlorosis, and wherever nutrition is below par it acts as a tonic and reconstructive. He concludes with the following special points to be observed: The treatment is usually given but once a day, but may be employed with advantage in the morning and at bed time. Always cover up each limb well after it has been manipulated. Do not use, as is recommended by some authors, an alcohol or other bath after massage, because you will be defeating the purpose of the whole treatment; when the treatment has been given in the morning and the patient wishes to be relieved of the cocoanut-oil or other fat, this should be removed an hour or two afterward by means of a little bay rum, eau de Cologne, or alcohol on a rough towel. Avoid unnecessary talking. Do not use enough force or hurt your patient.

104. **Jamaica as a Health Resort.**—Stafford's article is a description of Jamaica and a recommendation of it as the best locality in the Caribbean as a health resort. Among the advantages he recommends the stability of the government and the conveniences of modern civilization which are largely absent in other neighboring regions.

105. **The Plague.**—This is the complete report of the Government Commission on the plague in San Francisco, which appeared in THE JOURNAL for April 20 and 27.

107. **Rickets.**—Sherman considers structural weaknesses in the bone the cause of the skeletal deformities of rachitis. The active cause is muscular action or too great superincumbent weight or pressure. The bone always yields in the direction in which the greater force is working, and this is often determined by the natural shape of the bone, the tendency being to increase normal curves. In some cases there is hypertrophy of the deformed bone to antagonize the deforming force. Symmetrical deformities are characteristic.

115. **Atropin.**—Van Zandt, in his early practice, met with congestive chills in the malarial regions, and on failure of the ordinarily recommended treatment reasoned that if he could render the cold, blue and moist skin of his patients red, hot and dry, it would possibly have a good effect. Belladonna occurred to him as an agent suitable for trial, and he used it with success, later substituting atropin sulphate. He gives 1/60 gr. of atropin, and more in twenty to thirty minutes if no visible effects are produced, in some cases supplementing these with strychnia. Under this medication, he finds that reaction occurs and vomiting and purging ceases, generally in a few minutes.

116. **Burns.**—The first indication when called to treat a burn is to relieve the pain, and Binkerd finds the best agent for this purpose is a mixture of carbolic acid and glycerin; 1 part and 2 parts respectively. He says it may be applied to any burn with the best results; the pain will disappear in five minutes. He has had a large experience with these injuries, and he would apply this preparation, thoroughly rubbing the dressing on several times in the twenty-four hours, paying attention to the excretions and secretions and using careful cleanliness. After the angry swelling has begun to subside he changes to an antiseptic ointment composed of yellow wax, 1 oz., and olive-oil 3 oz., heated together, and then a dram each of carbolic acid and bismuth subnitrate with 2 to 4 drams of tannin thoroughly incorporated in the ointment. He applies this on a small piece of lint, warm, after first dusting with tannin and subnitrate, equal parts. He claims this is the very best and most satisfactory method of treating extensive and painful burns.

118.—This article appeared in THE JOURNAL of February 9, p. 363.

119.—Ibid., XXXV, p. 1086.

122.—See abstract in THE JOURNAL, XXXIV, p. 1491.

123.—Ibid., p. 1490.

126. **Intubation.**—Sampson's article insists on the importance of intubation and gives directions and illustrations how to make and use the apparatus, together with a table of dimensions for the tubes. He makes his tubes, in cases of emergency, out of lead or solder, pieces of wood, bamboo pipe-stems, or any substance which can be shaped and hollowed out to suit.

132. **Cervical Lacerations.**—Harrison calls attention to some peculiar reflexes observed by him in connection with lacerations of the cervix. Cases of supraorbital headache, of lumbago, of nausea, of palpitation, of choking sensation whenever the patient attempted to walk and aggravation by every irritation of the lower lesion of the cervix are reported. These were all relieved by operation and treatment.

133. **Duration of Life.**—Bankston reviews the life expectancy tables and the average duration according to occupation, and discusses the chances of longevity under ordinary conditions. He asks what should be the normal duration, and using the period required for maturity as a basis, which according to biologic investigations, he says, would be one-fifth of the total, he maintains that the average duration of life should be 130 years if all conditions of vitality for longevity could be observed and all intercurrent abuses and exposures overcome. The greatest achievement in the twentieth century will be the demonstration of definite laws for increasing the duration of life by eradicating all diseases, blemishes, degeneracies, crimes, etc.

143. **Periurethral Abscess.**—The special essential point emphasized by Bernart, in regard to follicular and periurethral abscess, is to make sure of the diagnosis, for a follicular abscess may closely simulate a chancre or a gumma; he refers to

occluded abscesses that do not discharge freely. He says we should try all the mechanical means available to produce an opening of the occluded duct or an absorption of the deposit, but never await the breaking of a follicular abscess, as the destruction of the tissue is greater, or it may break both externally and internally or may rupture internally and point backward, thus favoring urinary infiltration. We should open through the urethra, if possible.

147. **Quinin.**—Williams finds fevers in his section of Arkansas, where the attack commences with chills and frequently high fever, which do not react to quinin though they are commonly called cases of malaria. He thinks they are not malarial fever. He has practiced medicine in this region of the country for fifteen years, and for twelve months in each he has tried to cut short or cure a case of this fever with quinin and has always failed. Lately he has not used quinin and his patients get along better.

Tuberculosis.—The following corrected formula is inserted at the request of Dr. O. A. Fliesburg, whose article was abstracted in THE JOURNAL of April 13, p. 1074. It was copied verbatim from the *Northwestern Lancet*, which has since made the same correction:

Ol. Iodo-Bromo-Phosphori Comp. Steriliz.

℞.	Iodi puri cryst.	1 50
	Bromi puri	0 50
	Phosphori puri	0 25
	Thymolis	
	Mentholis, āā	2 50
	Guaiacolis	1 25
	Ol. Morrhuæ, steriliz.	50
	Fiat sol. secundum artem.	

FOREIGN.

British Medical Journal, April 13.

The Saline Treatment of Dysentery. W. J. BUCHANAN.—The author published, in a previous issue, Feb. 10, 1900, a note on the results of the treatment of dysentery by salines, in 555 cases with only 6 deaths; 300 more cases have since come under his observation in the Central Prison, Bhagalpur, Bengal, making a total of 855 cases with 9 deaths. The results are better than those of the previous year. The average stay in the hospital was about eleven days, though many might have been discharged earlier, if it had been thought best. There is little to add to his remarks previously made. He used, throughout the year, the following mixture: Sulphate of sodium, 1 dram; aquæ fœniculi, ad 1 ounce, given four, six or eight times a day, each dose representing 1 dram of the saline. No dose was repeated on the following day until the stools had been inspected. The treatment was continued until every trace of blood and mucus had disappeared, which was generally the case in two or three days. In some cases they returned in three or four days, necessitating repetition of the treatment. He advocates this method for acute cases only, and does not deem it safe with chronic or relapsing cases with ulceration of the colon. Considering the fact that the death-rate among the natives, from dysentery, is usually given as from 30 to 37 per cent., its reduction to about 1 per cent. is certainly a favorable showing.

Resistance of the Larval Mosquito to Cold. M. J. WRIGHT.—Mosquitoes, it appears, occur abundantly in Aberdeenshire, Scotland. Wright has observed three species of the Anopheles and three of the Culex, which appear in great numbers from the middle of August to the middle of October, and are just as vicious as those in the tropics. The Anopheles bifurcatus and Culex nemorosus are the worst, while the Culex annulatus could not be induced to bite. The favorite feeding-time was late in the evening, but the Culex nemerosus was ready for business any time. The Culex pipiens and Anopheles bifurcatus would occasionally start blood-sucking on dull days or in a shady place in the woods. The observations were specially made, however, to test them in different climatic conditions; he found the larvæ under ice, active, in the latter part of October, and under the snow in pools in February. Most of the adult insects that he had in captivity died in the cold weather, and he is inclined to believe that the larva is the condition in which they pass the winter. The larvæ that changed into pupæ late in November, December and even January, died before completing their metamorphosis, and it appears that Scotch mosquitoes do not bear cold weather well. As regards the statement that the adult mosquito hibernates during the winter, he finds no actual proof of it. The larvæ, he thinks, continue the species without hibernation, and can be searched for and found with greater ease than the hibernated mosquito in out of the way corners. He believes that the best method of destroying the larvæ is not the intermittent application of coal-oil, but the suspension of a vessel containing the kerosene over the water and arranging for the discharge of the oil drop by drop. This is most advisable in accumulations of water near dwellings that can not be drained off or filled in.

The Practitioner, April.

Physiology of the Ductless Glands. JOHN ROSE BRADFORD.—Glands may be described as having one or more than one of three functions: they may elaborate an internal or an external secretion or an excretion, the distinction between the last two being usually quite as marked as between the first and second. Some glands confine their activity to the production of external, others, like the thyroid and suprarenal, of internal secretions. Further investigations may show still greater activities. Many glands have not only an external but also an internal secretion, like the liver, the glycogenic function of which is essentially of the nature of the internal secretion. The kidney is the most obvious excretory gland, though there is a possibility of other functions. Any secretory gland may under certain circumstances excrete, as the salivary glands, iodid of potash, and the liver may excrete toxic substances. In pathologic conditions this may occur to a large extent. In many glands the phenomena are under the control of the nervous system and this specially applies to external secretions and is best observed in the salivary and sweat glands. There are also other glands where there is probably a nervous control, where we have no conclusive evidence of it. The relation of vascular change to secretion is intimate, though it is independent of the process of secretion. In cases of internal secretion the nervous system acts less plainly, but there is evidence that it has its influence as in the case of the so-called diabetic puncture of the fourth ventricle affecting the liver. The external secretions are generally substances having a physiologic action, frequently ferments. The excretions of the gland are generally of no future use to the economy, though there are excretion processes with physiologic action besides, as, for example, the activity of the sweat glands influencing the bodily temperature. Internal secretions apparently are required for the physiologic activity of certain specific tissues of the body, and their existence is clearly established, in the suprarenals and thyroid, which fact has thrown a great light on the pathology of diseases of these organs. There are, however, many things to be worked up in regard to this, for example, the function of parathyroids in exophthalmic goiter. The removal of the parathyroid tissue experimentally, in spite of its small bulk, has the same fatal effects that follow complete removal of all thyroid tissue, though it does not seem to contain the colloid material, which contains the essential product of thyroid activity. Bradford thinks, in spite of all difficulties, the most plausible explanation of Graves' disease is that it is due to hypersecretion of the thyroid. As regards Addison's disease, it is impossible to get a complete explanation as the pathologic effects of the suprarenal are not known. The glycogen excess of the liver and the relation of the pancreas to glycosuria are also mentioned, but this only serves to show more clearly how complicated the problem of internal secretions are. Brown-Séquard many years ago considered that the kidneys had an internal secretion, and it does seem evident that the renal tissues may have some other functions than those of mere excretion, but the evidence of an internal secretion is not conclusive. We can not fully explain the pathology of uremia, and modern experimentation would seem to show that it does not result from the mere retention of morbid urinary constituents, but that it is in some way associated with proteid disintegration. The possibility of internal secretions of

the sexual glands is also mentioned, though other possibilities of the effects of their removal being produced in some remote or not understood way through the intermediation of the nervous system are also remarked upon.

Therapeutic Uses of Thyroid Extract. GEORGE R. MURRAY.—The function of the thyroid is to form an internal secretion, the colloid material; it is discharged from the alveoli to the lymphatics and is conveyed to the general blood stream. This secretion plays an important part in the general metabolism, which is impaired when the supply is absent or insufficient. The thyroid or thyroid extract is of value in the treatment of those conditions due to destructive diseases of the thyroid gland. The different ways in which this may be used are mentioned, but Murray thinks that the official preparations are preferable. Advanced cases of myxedema are now seldom met with since thyroid treatment has been adopted for the condition. The treatment here is divided into two stages: In the first the object is to get rid of the symptoms and restore the patient to health. In the second it is to keep him in the normal condition, and this necessarily lasts as long as the normal thyroid supply is maintained, even the whole life of the patient. He prescribes, as a rule, in the first stage only small doses, gradually increasing them to about 10 or 12 minims of liquor thyroidei, or 2 gr. of dry thyroid daily, and continues at this dose until the symptoms of the disease have disappeared. During the second stage as a rule 1 dram of liquor thyroidei a week is sufficient. Cretinism is a condition treated on much the same plan as myxedema and the earlier the better. He uses 1 minim of liquor thyroidei daily for each year of the child's age up to 10 or 12 years. In certain cases of goiter, especially the simple parenchymatous type in adolescents and young adults, thyroid treatment is very useful. Here it seems that the thyroid becomes hypertrophied in response to the demand for an increased supply of its secretion. By thyroid treatment we relieve it from some of its work and check hypertrophy. The soft parenchymatous goiter can in the majority of cases be reduced to two-thirds, one-half or even one-third of its former size, and this is usually sufficient to remove the dyspnea and lung discomfort. In some cases treatment fails; if no diminution is observed at the end of two months further treatment is probably useless. The symptoms of thyroidism are described and exophthalmic goiter discussed at length. It is a condition in which thyroid treatment is especially contraindicated. Thymus extract can be given with perfect safety, but its results are somewhat negative and opinion differs as to its utility. In one case treated by Murray, in which the patient took three thymus tablets a day for nine months, there was great improvement. Bramwell has found decided improvement from thyroid treatment in certain diseases of the skin, psoriasis for example, and it is useful in ichthyosis, though relapses may occur. In obesity it is useful as an adjunct to dieting, but can not be relied on alone. In some cases the dieting treatment fails without it. In many cases of insanity, even aside from those connected with myxedema, thyroid is often of value. The results of Easterbrook, Macpherson, and others are quoted. Lastly the author mentions Beatson's suggestion of treating inoperable carcinoma of the breast by the removal of the tubes and ovaries, combined with thyroid administration, and the good results also obtained without the operative treatment by thyroid by Page and Bishop. It seems probable, he thinks, that some 20 per cent. of the cases of inoperable mammary carcinoma are benefited by the combined treatment, though after the menopause removal of the ovaries does not seem to be so important. In these cases the doses of thyroid extract should be increased until distinct signs of thyroidism are produced. We have no evidence that this treatment is of any use in carcinoma of other organs.

The Chemistry of the Thyroid in its Physiologic and Pathologic Aspects. ROBERT HUTCHINSON.—The chemistry of the thyroid is noticed by Hutchinson, who finds iodothyrin the only physiologic active constituent. It is difficult to account for the iodin in the organism, it is also difficult to say whether it is essential to the activity of iodothyrin. He concludes that if its presence is essential it is not through virtue of its being iodin, but by reason of the peculiar form of organic condition in which it occurs. As regards the physiologic action of iodothyrin, he concludes that it can not be regarded as the ideal antifat remedy, because, instead of causing fat to be consumed alone or largely, it produces early destruction of the proteid tissue. When one reflects on the minute doses of iodothyrin which are capable of producing such profund effects on metabolism, one is filled with astonishment and tempted to suppose that it exerts its influence through the nervous system rather than directly through the tissues. There is, however, no proof of this beyond its influence on the general metabolism; no specific action of thyroid on any special organs in the body has been proven. What becomes of iodothyrin after it has affected its work is hard to say. It is possible that it may be used, taken up and used over again, but it may be excreted, as a trace of iodin can be detected in the urine after thyroid administration, and symptoms of thyroidism have been observed in nursing infants whose mothers were being thus treated. The toxic symptoms of thyroidism are held by the author to be due more probably to some other product produced in the increased metabolism that the thyroid induces. As regards goiter, chemical investigation has not thrown any light on its pathology, but in myxedema the case is different. Myxedema is a disease in which the general metabolism is sluggish and the effect of the thyroid is to stimulate it. The physiologic action of iodothyrin explains the therapeutic action in this disease. The hyperthyroidization theory of exophthalmic goiter is not the one endorsed by Hutchinson. No one has yet succeeded in producing Graves' disease even by enormous doses of thyroid. Neither can we assume that it is producing an abnormal secretion of unusual potency, for investigation of the colloid matter from the enlarged thyroid in Graves' disease fails to show any marked departure from the state of health; and its administration experimentally and clinically is not attended by any symptom indicating increased toxemia. Parathyroids also contain iodin. He believes that the accumulated evidence seems irresistible that it is to the removal of the parathyroids that the nervous symptoms ordinarily associated with general thyroidectomy are due. It seems more probable, however, that they are concerned in the removal of something from the blood, rather than adding something to it. Administration by the mouth does not combat the symptoms resulting from their removal, nor does their administration have any beneficial effect in myxedema, and they have been found entirely inert in cases of insanity. Removal of the thyroid alone probably causes myxedema, while removal of the four parathyroids produces the acute tetanic symptoms observed after so-called experimental "thyroidectomy." The symptoms of myxedema can be explained by the absence of iodothyrin from the blood. The symptoms of parathyroidectomy are not susceptible of any satisfactory explanation as yet. The chemical evidence is, on the whole, opposed to the over-action theory of the thyroid of exophthalmic goiter, but whether the parathyroids play any part in the production of that disease, chemistry is not yet in a position to decide.

Annales de Dermatologie (Paris), March.

Ducrey's Bacillus and Humanized Media. LENGLET.—It is almost impossible to cultivate Ducrey's bacillus from the primary simple chancre, but it can be accomplished by inoculating a second chancre on the thigh. The bacilli cultivate readily from the pus of the second lesion. This measure is unnecessary, however, and superfluous, as microscopic examination alone is sufficient to determine the presence of the bacillus. It is a coccobacillus, isolated or sometimes surrounded with a glairy substance which fastens the bacilli together in clumps or chains.

Early Pupil Symptoms of Acquired Syphilis. SULZER.—Out of 33 syphilitics examined, 14 exhibited the anomaly which Sulzer believes he is the first to note. Visual acuity and light-perception are practically normal, and the symptom, the lack of associated reaction on the part of the pupils, is evidently due to a lesion of the motor part of the peristaltic arc which occasions the contraction of the pupil under the influence of light and of near fixation. In 12 of the 14 patients, the pupil

reaction to light was weak or absent, while convergence was normal. This peculiarity is characteristic of the Argyll-Robertson sign, but differs from the latter as the pupils were of medium diameter or much dilated in all the syphilitic patients. In one case the pupils did not react to light nor in convergence, and in another, the lack of associated reaction was the reverse of that in the Argyll-Robertson sign; light reaction was retained while convergence did not occur. Accommodation was normal in all. This distinct and constant dissociation distinguishes the disturbances observed from internal ophthalmoplegia. It also explains why this anomaly has passed unnoticed. The vision being undisturbed, it attracts no attention. All of the patients were in the first year of syphilis, the majority in the third month. The duration of the symptoms is less than that of internal ophthalmoplegia, the course averaging four to six weeks. In one case the dilated pupil was immovable, but accommodation was intact.

Urinary Formula in Dermatoses. GASTOU.—For several years Gastou has been studying the urinary formula in cutaneous affections, and, comparing the results he has obtained with those of other investigators, he finds that in acute, non-medicinal dermatoses the specific gravity of the urine and the chlorids are increased, while the urea and phosphates are diminished. In chronic dermatoses with nervous or cachectic manifestations, the specific gravity, the urea and the phosphates are diminished, while the chlorids are increased. In bullous dermatoses all the elements are generally diminished, but during exacerbations there is considerable modification of the proportions between these elements. In the secondary stage of syphilis and at the period of tertiary visceral lesions, all the elements are increased except when the nervous manifestations induce a decrease of all the elements excepting phosphates which are increased. Subnormal acidity and subnormal amounts of phosphates are the rule in dermatoses. Investigation of the acidity is facilitated by the fact that, as it is mostly due to acid sodium phosphate, titration with calcium saccharate does not require any staining reagent. The normal formula is for the density, corrected to 15 C., 1.017; total acidity in SO_4H, 0.849; phosphoric acid in PO_5, 2.083. Fifteen different cutaneous affections were studied and hypoacidity and hypophosphaturia found the rule. The therapeutic indication is therefore to increase the acidity and the phosphates. Cautru, from his study of hypoacidity in arthritis, advocates the following medication: 1, increase the fluids ingested, avoiding alkaline waters; 2, increase the phosphates by taking 3 gm. of sodium phosphate in a glass of water on awaking; and during the two principal meals, a teaspoonful of a solution of medicinal phosphoric acid, 17 gm. in enough distilled water to make 250 c.c. The dose is increased by a teaspoonful after four days, until by the eighth day a tablespoonful is being taken. This treatment should be kept up two or three weeks and the urine examined every month. To prevent digestive disturbances with pain 1 gm. of precipitated calcium carbonate can be taken two hours after meals, in water.

The Blood and Urine in the Course of Alopecia. JACQUET and PORTES.—Fifty-nine cases of alopecia areata were examined, and it was found that the maximum of disturbances in the hair growth, correspond with the maximum of disturbances in the urine and blood, in the majority of cases. A marked hyperchloriduria was also discovered, corresponding to a marked hypochloridemia in the advanced cases. The results of this research indicate that persons affected with alopecia are suffering from an actual dechloridation, and this fact taken in connection with the tonic and beneficial action of injections of salt solution indicates that alopecia areata is a local trophic disturbance grafted on a general trophic disturbance, and is in fact a mere episode on the surface of this profound dystrophy.

Annales de la Soc. Med.-Chir. de Liege, March.

Bacteriology of the Lungs. L. BECO.—The blood was found sterile in 21 out of 50 cases of pneumonia examined by Beco, and in only 9 was pneumococcemia evident. In two mild cases a few scattered pneumococci were found in the blood. These facts, taken in connection with the results of research on the bacteriology of the lungs, indicate that while the lung may be the portal of entry for infection, it is not favorable to its development. Beco has previously shown that virulent pneumococci may live in the lungs without determining any appreciable lesion. He points out the fact that these and other bacteria living harmlessly in the lungs may invade the surrounding organs postmortem. Bacteria found in various organs on autopsy do not necessarily originate in the alimentary canal, as has been generally assumed.

Gazette Medicale de Paris, April 6.

The Bacillus of Articular Rheumatism. P. ACHALME.—The bacillus which Achalme described in 1891 is probably, as a rule, an ordinary saprophyte. Under the influence of fatigue or cold, the blood becomes favorable for its development, and it passes by way of the circulation to the heart muscle where it locates, the activity of the muscle furnishing it with the culture-medium it prefers. It may propagate in the serous membranes of the endocardium or pericardium and in the pleura, even before the articular manifestations. The latter by their symmetry, their mobility, and their occasional sudden disappearance with complete restitution, indicate that they are not directly microbian, but are due to the toxins generated by the bacilli ensconced in the primary focus, the heart muscle. There is a sort of eruption on the synovial membranes consecutive to the carditis, like the sore throat of scarlet fever. The carditis may exist without articular complications. The bacillus causes an actual process of putrefaction in the living tissue, the products of which are probably amido-acids, as *in vitro*. Sodium salicylate combines with the most important of this group, glycocol, and is eliminated as salicyluric acid. This fact suggests an explanation of its heroic action in acute articular rheumatism as well as in other non-infectious rheumatic manifestations. The bacillus is of the same size and shape as the anthrax bacillus and the septic vibrio. It is anaerobic, takes the Gram and the Claudius stains and requires a temperature above 21 and below 45 C. The sporulation is ovoid; not so terminal as that of the tetanus bacillus. It grows on milk with production of gas, and coagulates into a small clot, pitted with holes from the action of the bubbles. It induces an acid fermentation at the expense of the carbohydrates, but never sporulates in an acid medium. If a rabbit is inoculated with 2 c.c. of a culture of the bacillus, it usually dies in four or five days with serous effusions in the pleura and pericardium, but it is impossible to find any of the micro-organisms in the fluids or tissues. A smaller dose kills a young rabbit in thirty-six to forty-eight hours, with a pronounced infection of all the organs. The results of bacteriologic examination of patients are positive in some cases and negative in others, but before accepting the negative findings milk or bouillon should be copiously sewn with small cubes cut from the myocardium.

Journal de Medecine de Bordeaux, March 24.

Lumbar Puncture in Case of Cerebral Tumor. J. ABADIE.—A woman of 42, with intense headache from an assumed cerebral tumor, but no fever, was treated in vain with the usual remedies to relieve the pain. The only respite obtainable was after large doses of bromid and chloral. About 25 c.c. of cerebrospinal fluid were withdrawn, followed at first by an aggravation of the headache and nausea. By the next day the headache, and soon after the optic neuritis, had permanently disappeared. Abadie is inclined to try lumbar puncture henceforth in all cases of headache from any source, rebellious to other measures. The disappearance of the optic neuritis from stasis, after the puncture, is another argument in favor of the theory that this neuritis is due to hydrops of the sheath of the optic nerve.

Journal des Sciences Medicales de Lille, March.

Salt Solution in Severe Burns. A. BESSON.—The blood becomes very much modified in case of extensive burns with phlyctenæ and blisters, principally in the loss of fluidity and the resulting tendency to coagulation. This functional paralysis of the blood causes the retention and accumulation of toxins in the circulation and general intoxication. Persons who die from extensive burns succumb with symptoms resembling those of uremia. The subcutaneous injection of salt solution restores fluidity to the blood and water to the dehydrated tissues, raises

the blood pressure, stimulates the nutritional changes, modifies the visceral circulation and frees the blood and the tissues of the toxins elaborated in general metabolism, and the waste products, the elimination of which is checked or arrested in consequence of the nutritional alterations in the emunctories. The amount should be at least 1000 c.c., repeated twice a day or even oftener if necessary. The formula which Besson has found successful in a number of severe cases is 8 gm. of sodium chlorid to 1000 gm. of water.

Semaine Medicale (Paris), April 10.

Paresthetic **Meralgia and Flat-Foot.**—J. Pal, of Vienna, calls attention to the fact that in eight cases of paresthetic meralgia he found the affection coincident with an incipient or developed flat-foot, dependent in its turn on a rapid increase in the weight of the body.

Centralblatt f. Chirurgie (Leipsic), March 23.

Application of Fracture Bandages. F. BAEHR.—By applying a broad bandage around the limb at the point of fracture, if the two ends of the bandage are crossed to the right and left, exactly parallel, traction on the ends during extension of the limb will pull the displaced stumps of the shaft into the corrected position. The bandage thus applied works much better than the fingers for the purpose. It can even be applied in this way through a plaster cast, by leaving an aperture for the ends of the bandage, which can then be tied, with traction, over a slat. Baehr relates several instances in which the stumps would not consolidate in the normal position after many trials. Application of the bandage curb described resulted in complete normal consolidation in twenty-two days or less.

March 30.

Muscle Flap for Large Hernia. SALISTSCHEFF.—A large hernial orifice the size of a man's fist was closed by two muscle flaps cut in half the thickness of the rectus muscle, above and below the aperture, and turned over on it, still attached at the base, 2 cm. from the edge of the defect. The flaps were sutured together and formed a solid muscular wall over the aperture. In another case the defect was the size of a man's head, in the lower right inguinal region. One long flap was cut in the rectus, attached below, and was twisted over to cover the defect. The results have been extremely satisfactory.

Dermatologisches Centralblatt (Berlin), April.

Bromin and Tannin for Pruritus. M. JOSEPH.—Bromin has an anesthetic, and tannin an astringent action on the skin. The combination produces a salve which is very effective in all forms of pruritus, according to Joseph's tests and experiences during the last twelve months. He uses a dibromotannin jelly, about 20 per cent. bromin to 40 per cent. tannin, known as bromocoll and first suggested by H. Brat. The alkaline secretions of the skin enhance the action of the salve, which has considerable disinfecting and healing power. It never produced symptoms of irritation in subacute or chronic processes in his experience. He uses a 10 to 30 per cent. jelly and found the local and general effect prompt and most gratifying, especially in cases of lichen, urticaria and cutaneous neuroses.

Deutsche Med. Wochenschrift (Berlin and Leipsic), April.

Diffuse Peritonitis After Appendicitis. E. SONNENBURG.—During the years 1894 to 1897 only 25 patients out of 61 with peritonitis from appendicitis in Sonnenburg's service, survived. It was the progressive, fibrino-suppurative variety in 28, with 64 per cent. recoveries, and diffuse, ichorous suppurative in 33 with 21 per cent. recoveries. He reports since 1897, 54 recoveries in 89 patients, including 71 per cent. recoveries in 53 cases of fibrinous, and 44 per cent. of 33 cases of ichorous peritonitis. He attributes this favorable record to his practice of operating within twenty-four hours, whenever possible. He incises in the cecal region and, instead of draining, tampons extensively, his "apron tamponade" keeping the abdominal cavity well open. He rejects irrigation as liable to cause shock and favor paralysis of the intestines. Spontaneous, continuous pain and its increase under pressure speak for the ichorous variety. In dubious cases under expectant treatment, morphin should be given in very small doses so as not to mask the symptoms.

Three Extraperitoneal Tumors. C. HELBING.—The first tumor was a cyst containing ciliated epithelium. It had developed in the cavum Retzii, possibly from relics of the parovarium. The second was a cyst in the vicinity of the tail of the pancreas, springing from the retroperitoneal connective tissue, probably a sarcoma. Both patients were women 43 and 60 years of age respectively. The third patient had a papillary, partially cystic adenocarcinoma in the region of the kidney, with no connection with any retroperitoneal glandular organ and which was traceable to no embryonal germ.

Two Cases of Urogenital Coli-Bacillosis. W. KARO.—The colon bacillus was found pure in the pus in the epididymis in both cases. There was concomitant enteritis in each case and both troubles vanished together, suggesting a connection between them, although there had been preceding gonorrheal affection in one case. It is impossible to decide whether there had been originally infection of the urethra and bladder or whether it occurred through the prostate and seminal vesicles or through the blood. The testicle was much involved in both cases and the disturbances commenced acutely with considerable temperature and intestinal disturbances. One patient was a man of 65, and after a comparatively mild stage, evidences of a severe general infection became apparent. This exacerbation may have been due to a suddenly augmented absorption of toxins or to an overloading of the organism with bacteria, which the body disposed of without the production of metastatic affections and which appeared only once, as the focus of the acute lesion was removed with the ablation of the testicle and epididymis. The primary benign phase may have corresponded to the purely inflammatory, suppurative stage and the exacerbation to disturbances in the circulation and necrosis. The other case was more chronic. There was a history of syphilis and gonorrhea in 1895, the next year a second gonorrhea with bilateral epididymitis which was cured after five weeks of hospital treatment. In 1898 a urethral discharge commenced and resisted all treatment until April, 1900, when the patient took a strong purgative and two days later the right testicle became swollen, with much fever and severe pains. The prostatic and seminal secretions contained the colon bacillus pure as in the first case, and it was also derived from the scrotal ulceration by puncture. The latter subsided after the puncture and the enteritis also yielded to calomel. The two cases show that the affection may become threatening at any moment, although the early stage is benign. This suggests the query whether castration should be proposed to the patient earlier in this than in other affections of the testicle, to forestall general infection. Karo thinks this is unnecessary so long as there are no indications of suppuration in the genital glands, and the patient has no serious subjective symptoms. He must be kept under constant supervision and an incision made on evidence of fluctuation or if severe subjective symptoms supervene, or if the fever keeps up unduly long. If the patient's condition still remain threatening, castration should be the last resort.

Wiener Klinische Rundschau, March 31.

Intraperitoneal Rupture of the Bladder. KRABBEL.—There are only 40 cases of extraperitoneal rupture of the bladder on record, and 152 intraperitoneal ruptures. The differentiation of the two varieties is difficult. It is assisted by rectal palpation under narcosis and a tetanic tension of the abdominal wall. The latter is pathognomonic of an intestinal lesion and also of an intraperitoneal rupture of the bladder, at least in the first few hours. In one case the rupture was both intraperitoneal and extraperitoneal. Dittrich states that a "box sound" in the bladder region, just above the symphysis, indicates a rupture of the bladder in the extraperitoneal portion of the organ. This deep sound is heard after catheterization, probably due to the entrance of air through the catheter. Peritonitis appears about forty hours after the rupture into the peritoneum. The symptoms are much less severe in case of an extraperitoneal rupture and the infiltration of urine is more evident, in most cases. The operation should not be deferred an hour. The incision should be longitudinal and the peritoneum detached and sutured, transforming the intraperitoneal

into an extraperitoneal lesion in which the chances of recovery are far more favorable. Berndt advises incising the bladder to locate the rupture, if necessary. In a personal case reported, Krabbel was erroneously led by the quantity of blood-stained urine voided by catheterization, to assume a mere lesion of the mucosa, but symptoms of peritonitis the fourth day indicated an intraperitoneal rupture. He operated at once, tamponned and cured the patient. He is inclined to believe that an intestinal loop must have been adherent near the spot of the rupture, which partially occluded it and checked the outflow of urine. The small amount remaining in the bladder was absorbed by the peritoneum during three days without disturbance.

Horseshoe Kidney. J. PREINDLSBERGER.—This anomaly was noted by the writer six times in the course of 1344 autopsies. In five the kidneys were united below and in one above. Each is illustrated. Four of the subjects were adults; no evidences of renal trouble had been noted in any case. In one case a third renal branch of the aorta emerged from the aorta 1 cm. above its lower fork, and passed to the lower portion of the right kidney.

Wiener Klinische Wochenschrift, March 7.

Differentiation of a Diverticulum in the Esophagus. W. ZWEIG.—Systematic rinsing out of the diverticulum is the only means to prevent stagnation of food in it and consequent disturbances. Faradization, sounding and all other measures are useless, according to Zweig's experience. The cardiospasm causing the so-called idiopathic dilatation of the esophagus, on the other hand, should be treated by systematic, repeated sounding, and the atony of the esophagus dispelled by local faradization. The existence of a diverticulum is frequently suggested by the anamnesis, and study of the sounds made in swallowing shows that the second sound is absent or much modified. The diverticulum can be easily diagnosed by inserting two stomach-tubes with several perforations at the tip. The first almost inevitably finds its way into the diverticulum. When the second is then introduced, it passes directly into the stomach. The capacity of the diverticulum is determined by estimating the amount of stagnated food evacuated from it. The same quantity of a solution of methylene blue is then introduced through the first sound into the diverticulum, where it remains. Slowly withdrawing, then, the second tube—which has passed into the stomach—not a trace of the blue fluid will be evacuated through it, and the tube will not be stained with the blue at any point. In case of a mere dilatation of the esophagus, on the other hand, the colored fluid will pour out from the top of the tube as it enters the esophagus, and the stain will be conspicuous at the tip.

Auto-Observation of the Elimination of Acetone. SCHUMANN-LECLERCQ.—The tests on the author in sound health, which are described, extended over a period of two or three months at the same season of the year in two consecutive years. The results confirm the assumption that the transformations of fat in the body are the principal if not the only source of the acetone eliminated. Carbohydrates diminish the amount of acetone eliminated, by their pronounced inhibiting influence on the transformation of fats.

Infiltrating Carcinoma of the Bladder. J. ENGLISCH.—The chief points in the differentiation of infiltrating, from other varieties of carcinoma of the bladder, are the even, exceptional hardness of the bladder walls and the limited capacity of the organ. The infiltrated portion feels like a hard, tough plate, and the bladder, whether full or empty, seems distended and unusually solid, like a youthful bladder. The early, severe pains are also significant. They may be neuralgic in character and radiate to the small pelvis and sacral region, or to the kidneys. Urination is painful and the desire exceptionally frequent, with no relief after emptying the bladder. The urine at first is normal, later becomes cystitic, and finally purulent with numerous coagula. The persistence of these characteristics, unmodified by treatment, is also an important sign in combination with the persisting pains, relief from which can be obtained only from powerful doses of narcotics. Tenderness of the spine or other bones, and numerous metastases, speak for a carcinoma of the prostate. The patient usually applies to the physician for relief from supposed persisting catarrhal symptoms. The neoplasm is then too far advanced for more than a palliative operation. Legueu is the only surgeon who has succeeded in curing a patient thus affected. Albarran has reported seven operations, none successful. The extensive infiltration and adhesions with adjacent organs render the operation peculiarly difficult. If necessary the ureter can be implanted in the sigmoid flexure, or an abdominal fistula can be made to spare the patient the pains of micturition. In the two personal cases reported, a slight difficulty in urinating had been noticed for years, with occasional pain in the sacral region. After a severe cold, micturition became intensely painful and accompanied by hematuria. Pains soon appeared in the renal region and in one case death occurred four months later. The patient was a man of 69. He was unable to tolerate a permanent catheter.

March 28.

Pathology of Migraine. M. SIHLE.—A careful study of the condition in his own case has convinced Sihle that the connection between migraine and epilepsy is extremely close, even hinting that the future may prove that migraine is an epileptic seizure without convulsions, and epilepsy merely an advanced stage of migraine. He considers it established that a unilateral alteration of the cortex is the indispensable prerequisite, entailing a pathologic susceptibility to chemical influences. The uric acid diathesis, tuberculosis, anemia and similar chronic nutritional disturbances prepare the soil on which the abnormal chemico-toxic effects develop. Besides this, certain agents affecting the brain directly may be the means by which an attack is precipitated, for instance, strenuous mental effort, stimuli affecting a single sense, as strong perfumes affecting the sense of smell, street noises, the hearing, a dazzling light, the sight, irritation from nasal polypi, etc., and digestive disturbances which irritate the brain by the toxins poured into the blood. The "Flimmerscotoma" or temporary partial amaurosis which precedes migraine, in at least half the cases, is usually crossed in respect to the following pain. It is probably due to the action of the toxin on the cortex. As the cortical cells dispose of or eliminate the toxin and return to their previous condition, the toxic elements, leaving the cortex, have to pass the pia, and induce swelling and hyperemia which in turn irritates the nerves and induces the pain. Migraine is therefore a pain in the pia mater. It is usually localized in the temples as the temporal regions are peculiarly susceptible to toxic influences, as shown in the headache after drinking liquor.

Rivista di Patologia Nervosa e Mentale (Florence), January.

Modifications of Nerve Cells in Acute Intoxications. M. CAMIA.—The various phases of functional activity of the nerve cell are probably accompanied by many slight modifications in its anatomic structure, not sufficiently marked to induce any change in its structural physiognomy. In experiments on twenty-four dogs and a number of rabbits and guinea-pigs, injected with large doses of convulsive and narcotic drugs—strychnin, cocain, etc.—the alterations produced in the course of these acute intoxications were comparatively slight and probably reparable. They are evidently due to disturbances in the nutrition of the cell rather than to any functional perturbation. They differ but slightly in the diverse intoxications, varying only in degree, independently of the symptomatology of the intoxication.

The Efferent Cerebellar Routes. F. ORESTANO.—In experiments with dogs who had had the cerebellum removed, actions which are habitually automatic, such as walking, etc., were only possible when the animal exerted its will for each step of the process. If the animal's attention was diverted, it fell over. From these and similar experiences, Orestano concludes that the cerebellum not only presides over the automatic movements in general, but enters largely into the mechanism by which they are produced. The cerebellum relieves the brain of all trouble in regard to habitually automatic actions, with great economy of nerve force and advantage to the higher intellectual functions.

The Nervous **System the Anatomic Counterpart of the Vascular System.** A. RUFFINI.—Apathy's recent discoveries of a fine network of fibrils beyond the supposed terminals, are confirmed and amplified by Ruffini, who is *Libero Docente* of normal histology at the University of Siena. He believes that this discovery completely demolishes the neuron theory, and establishes that the nervous system is the exact anatomic counterpart of the vascular. The terminals should rather be called "expansions," as they are not the terminations of the nerves. He shows that the delicate ultraterminal fibrils of the sensory nerves branch from Meissner's corpuscles and tend always toward the subpapillary layer to which they seem to be limited. They have no myeline sheath and apparently constitute a system independent of the motor fibers. He thinks he has reason to assume that these ultraterminal sensory fibrils communicate with the sympathetic nerve fibers, thus forming a nerve circuit in the sensory sphere, like the circulation in the vascular system or the electric circuit of a battery. He believes that there are two circuits, one through the motor fibers, in which the sympathetic is not concerned, and the other through the fibers and ultraterminal fibrils with the co-operation of the sympathetic, the small corresponding to the pulmonary, and the large to the peripheral, circulation.

Cronica Medica Mexicana (Mexico), April 1.

Life is **Proportional to the Lymphogenesis.** J. B. HERNANDEZ.—This communication presents arguments to prove that the lymphatic system is the most important of all in the economy, and that the blood is merely a part and a continuation of the lymphatic apparatus. So-called inflammation is lymphatic thrombosis. The lymphatic apparatus is the source of life, and here we must seek for the hidden secret of the cause of existence, the remedy of many diseases and possibly new resources for prolonging life. Potassium iodid has the property of rendering the lymph more fluid when it is abnormally coagulable, and the administration of this substance in innumerable cases of adenitis, bronchitis, incipient pneumonia, catarrh of respiratory and genital organs, rheumatic pains, etc., has promptly cured the patients in twenty-four to seventy-two hours, sometimes with complete restitution in less than a day. The success of this treatment indicates that the disturbances were due to a lymph thrombosis on which develops later, unless checked, the process of ordinary inflammation. Tuberculosis, syphilis and many other affections are attributed by Hernandez to the lymphatic system, and the importance of the latter explains the benefits derived from infusion of salt solution in infections.

Books Received.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interest of our readers.

HUMAN PLACENTATION. An Account of the Changes in the Uterine Mucosa and in the Attached Fetal Structures, During Pregnancy. By J. Clarence Webster, B.A., M.D. (Edin.), F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynecology in Rush Medical College. With 233 Illustrations. Cloth. Pp. 126. Price, $3.75 net. Chicago: W. T. Keener & Co. 1901.

AN INDEX OF SYMPTOMS as a Clew to Diagnosis. By Ralph Winnington Leftwich, M.D., Late Assistant-Physician to the East London Children's Hospital. Second Edition. Cloth. Pp. 267. Price, $2.00. New York: Wm. Wood & Co. 1901.

TWENTY-FIFTH ANNUAL REPORT OF THE MANAGERS AND OFFICERS of the New Jersey State Hospital at Morris Plains, for the Year Ending Oct. 31, 1900. Paper. Pp. 79. Trenton, N. J.: MacCrellish and Quigley. 1900.

PROTECTION CUARENTENTARIA de la Isla de Cuba. Por Arthur H. Glennan, Cirujano del Servicio de Hospitales de Marina, Jefe de Cuarentena de la Isla de Cuba. Paper. Pp. 20. Habana: Gaceta Oficial Press. 1901.

TRANSACTIONS OF THE SOCIETY OF ANESTHETISTS. Vol. III. Pasteboard. Pp. 168. London: The Medical Publishing Co. 1900.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. April. Paper. Pp. 27. Published by the Society. 1901.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, John B. Murphy, M.D., Chicago, Alexander D. Blackader, M.D., Montreal, H. C. Wood, M.D., Philadelphia, T. M. Rotch, M.D., Boston, E. Landolt, M.D., Paris, Thomas G. Morton, M.D., Philadelphia, Charles H. Reed, M.D., Philadelphia, J. W. Ballantyne, M.D., Edinburgh, and John Harold, M.D., London, with Regular Correspondents in Montreal, London, Paris, Leipsic, and Vienna. Volume 1. Eleventh Series, 1901. Cloth. Pp. 312. Price, $2.00. Philadelphia: J. B. Lippincott Co. 1901.

HYGIENE AND PUBLIC HEALTH. By Louis Parkes, M.D., D.P.H., Lond. Univ., and Henry Kenwood, M.B., D.P.H., F.C.S., Fellows of the Sanitary Institute and Members of the Board of Examiners. With Illustrations. Cloth. Pp. 732. Price, $3.00. London: H. K. Lewis. Philadelphia: P. Blakiston's Son & Co. 1901.

DISEASES OF THE NOSE AND THROAT. By F. De Havilland Hall, M.D., F.R.C.P., Lond., President of the Laryngological Society of London, and Herbert Tilley, M.D., B.D. (Lond.), F.R.C.S., Eng., Surgeon to the Throat Hospital, Golden Square. Second Edition, with 2 Colored Plates and 80 Illustrations. Cloth. Pp. 605. Price, $2.75. London: H. K. Lewis. Philadelphia: P. Blakiston's Son & Co.

LECTURES ON NASAL OBSTRUCTION. By A. Marmaduke Sheild, M.B. (Camb.), F.R.C.S. (Eng.), Surgeon to St. George's Hospital, London. With 1 Colored Plate and 27 Illustrations in the Text. Cloth. Pp. 106. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1901.

EXPERIMENTAL STUDY OF CHILDREN, Including Anthropometrical and Psycho-Physical Measurements of Washington School Children, and a Bibliography. By Arthur MacDonald, Specialist in the Bureau of Education. Paper. Pp. 1390. Washington: Government Printing Office. 1899.

THE FEEDING OF INFANTS. Home Guide for Modifying Milk. By Joseph E. Winters, M.D., Professor of Diseases of Children, Cornell University Medical College. Cloth. Pp. 47. Price, $0.50. New York: E. P. Dutton & Co. 1901.

PROCEEDINGS OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY. February. Paper. Pp. 50. Price, $0.15 per copy. Philadelphia: Published by the Society.

THE MEDICAL LAWS Enacted by the Maryland Legislature from 1892 to 1896. Paper. Pp. 23.

FIRST AID TO THE INJURED AND AMBULANCE DRILL. By H. Drinkwater, M.D., Cloth. Pp. 104. Price, $0.40. Edinburgh and London: Ballantyne, Hanson & Co.

BOROUGH OF INVERCARGILL, New Zealand. Standing Orders and By-laws. 1896. Pasteboard. Pp. 125. Invercargill: Southland Times Co.

CONSTITUTION OF THE MEDICAL CLUB OF PHILADELPHIA. Cloth. Pp. 19.

A HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS, Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By Samuel O. L. Potter, A.M., M.D., M.R.C.P., Lond., Formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco. Eighth Edition, Revised and Enlarged. Cloth. Pp. 950. Price, $5.00. Philadelphia: P. Blakiston's Son & Co. 1901.

INTRODUCTION TO THE DIFFERENTIAL DIAGNOSIS OF THE SEPARATE FORMS OF GALL-STONE DISEASE, Based upon his own Experience Gained in 433 Laparotomies for Gall-stones. By Professor Hans Kehr, Halberstadt. Authorized Translation by William Wotkyns Seymour, A.B. Yale, M.D. Harvard, Formerly Professor of Gynecology in the University of Vermont. With an Introduction by Prof. Kehr. Cloth. Pp. 370. Price, $2.50. Philadelphia: P. Blakiston's Son & Co. 1901.

A COMPEND OF HUMAN PHYSIOLOGY Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, A.M., M.D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College. Tenth Edition, Revised and Enlarged. With Illustrations and a Table of Physiologic Constants. Cloth. Pp. 270. Price, $0.80. Philadelphia: P. Blakiston's Son & Co. 1900.

MEMORANDA OF THE POISONS. By Thomas Hawkes Tanner, M.D., F.L.S., Eighth Revised Edition. By Henry Leffmann, A.M., M.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania. Cloth. Pp. 175. Price, $0.75. Philadelphia: P. Blakiston's Son & Co. 1901.

THREE THOUSAND FIVE HUNDRED QUESTIONS ON MEDICAL SUBJECTS ARRANGED FOR SELF-EXAMINATION. With the Proper References to Standard Works in which the Correct Replies will be Found. Third Edition, Enlarged, With Questions of the State Examining Boards of New York, Pennsylvania and Illinois. Paper. Pp. 230. Price, $0.10. Philadelphia: P. Blakiston's Son & Co. 1901.

THE MEDICAL NEWS POCKET FORMULARY FOR 1901. By E. Quin Thornton, M.D., Demonstrator of Therapeutics, Pharmacy, and Materia Medica in the Jefferson Medical College, Philadelphia. Third Edition, Revised and Enlarged. Leather. Pp. 287. Price, $1.50 net. Philadelphia and New York: Lea Brothers & Co. 1901.

LARYNGEAL PHTHISIS OR CONSUMPTION OF THE THROAT. By Richard Lake, F.R.C.S., Surgeon Laryngologist, North London Hospital for Consumption. With 36 Illustrations, 21 of which are Colored. Cloth. Pp. 94. Price, $2.00. Philadelphia: P. Blakiston's Son & Co. 1901.

INTERNATIONAL MEDICAL ANNUAL: A YEAR-BOOK OF TREATMENT AND PRACTITIONER'S INDEX. 1901. Nineteenth Year. Cloth. Pp. 682. Price, $3.00. New York: E. B. Treat & Co.

New Patents.

Patents of interest to Physicians, April 2 and 9:

671,307. Soda-water dispensing fountain. Charles H. Clark, Newark, N. J.

671,337. Ligating forceps. Llewellyn Gibson, Lansing, Mich.

671,067. Surgical instrument. August Heiss, Solingen, Germany.

671,420. Electrotherapeutic spectacles. Alexander F. Humphrey, Allegheny, Pa.

671,138. Instrument for improving the hearing. Adolphus A. Knudson, Rutherford, N. J., and F. H. Clark, Brooklyn, N. Y.

671,346. Nasal douche cup. Ernst G. Lochmann, Leipsic-Gohlis, Germany.

670,998. Atomizer. Samuel F. Patterson, Baltimore, Md.

671,247. Medicine spoon. Anna E. Super, Narberth, Pa.

34,312. Design, medicinal tablet. H. P. Ewell and E. A. Everett, Rochester, Mich.

34,313. Design, finger slide and wire holder, for surgical snares. Richard P. McCully, Brooklyn, N. Y.

671,622. Pharmaceutical compound and making same. Arthur Eichengrun, Elberfeld, Germany.
671,477. Vaginal syringe, James Graham. Detroit, Mich.
671,804. Coated pill, etc. Frederick H. Metcalf, Franklin, Ill.
671,499. Sterilizing apparatus, Austin V. M. Sprague, New York City.
671,500. Door for sterilizing apparatus. Austin V. M. Sprague, Brooklyn, N. Y.
34,337. Design, blank for specula. Charles J. Pilling, Philadelphia, Pa.
34,338. Design, blank for rectal speculum blades. Charles J. Pilling, Philadelphia, Pa.
34,339. Design, blank for speculum blades. Charles J. Pilling, Philadelphia, Pa.
34,340. Design, blank for speculum blades and handles. Charles J. Pilling, Philadelphia, Pa.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, War Department, Washington, D. C., April 11 to 17, 1901, inclusive:

Roger Post Ames, acting asst.-surgeon, leave of absence granted with permission to go beyond sea.

Aaron H. Appel, major and surgeon, U. S. A., leave of absence granted.

Davis Boak, dental surgeon, from Martinsburg, W. Va., via San Francisco, Cal., to duty in the Division of the Philippines.

William H. Corbusier, major and surgeon, U. S. A., member of an examining board convened at the Army Building, New York City, relieving Major H. S. Kilbourne, surgeon, U. S. A.

Calvin DeWitt, lieutenant-colonel, deputy surgeon-general, U. S. A., relieved from further duty as chief surgeon, Department of Dakota, to report in person to the Surgeon-General of the Army for duty.

Albert H. Eber, captain and asst.surgeon, Vols., recently appointed, leave of absence granted, on the expiration of which he will proceed from St. Clair, Mich., via San Francisco, Cal., to duty in the Division of the Philippines.

Frederick C. Jackson, captain and asst.-surgeon, Vols., previous orders revoked, leave of absence granted on the expiration of which he will proceed to Columbus Barracks, Ohio, for temporary duty.

Ernest K. Johnstone, captain and asst.-surgeon, Vols., recently appointed and now in San Francisco, Cal., to duty in the Division of the Philippines.

Henry S. Kilbourne, major and Surgeon, U. S. A., is detailed member of a board in San Francisco, Cal., for examination of candidates for admission into the Medical Department of the Army, relieving Lieut.-Col. B. F. Pope, deputy surgeon-general, U. S. A.

Clarence E. Lauderdale, dental surgeon, from Naples, N. Y., via San Francisco, Cal., to duty in the Division of the Philippines.

George B. Lawrason, captain and asst.-surgeon, Vols., recently appointed and now in Washington, D. C., to proceed via San Francisco, Cal., for duty in the Division of the Philippines.

James W. Madara, captain and asst.-surgeon, Vols., recently appointed, from Lexington, Ky., via San Francisco, Cal., to duty in the Division of the Philippines.

Francis M. McCallum, captain and asst.-surgeon, U. S. Vols., former orders amended as to direct him to proceed from Fort Reno, Okla., via Jefferson Barracks, Mo., to San Francisco, Cal., en route for service in the Division of the Philippines.

Edgar A. Mearns, major and surgeon, U. S. A., sick leave extended.

Jefferson D. Poindexter, captain and asst.-surgeon, U. S. A., found disqualified physically by an examining board and retired from active service as a major to date from April 13, 1901, the date on which he would have been promoted to that grade by reason of seniority if he had been found qualified.

William B. Summerall, captain and asst.-surgeon, Vols., recently appointed, from the Department of Cuba, via San Francisco, Cal., for duty in the Division of the Philippines.

Alfred A. Woodhull, colonel and assistant Surgeon-General, U. S. A., retired from active service, by operation of law, having reached the age limit of 64 years.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended April 18, 1901:

Surgeon G. T. Vaughan, reassigned to duty in the Marine-Hospital Bureau. April 13, 1901.

P. A. Surgeon H. D. Geddings, directed to proceed to Buffalo, N. Y., for special temporary duty in connection with the installation of the Marine-Hospital Service exhibit at the Pan-American Exposition.

P. A. Surgeon Rupert Blue, directed to proceed to San Francisco, Cal., and report to Surgeon J. H. White for special temporary duty.

Asst.-Surgeon H. B. Parker, directed to proceed to San Francisco, Cal., and report to Surgeon J. H. White for special temporary duty.

Asst.-Surgeon M. H. Foster, two days' leave of absence granted Asst.-Surgeon Foster by Bureau letter of March 11, revoked. April 18, 1901.

Asst.-Surgeon G. H. Corput, directed to proceed to San Francisco, Cal., and report to Surgeon J. H. White for special temporary duty.

Asst.-Surgeon Dunlop Moore, relieved from duty at Port Townsend quarantine, and directed to proceed to San Francisco, Cal., and report to Surgeon J. H. White for special temporary duty.

Asst.-Surgeon T. D. Berry, granted leave of absence for thirty days from May 2. April 13, 1901.

A. A. Surgeon J. C. Ballard, leave of absence granted by Bureau letter of February 4, amended to read six days from April 23.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for seven days. April 13, 1901.

A. A. Surgeon R. H. McGinnis, directed to proceed to St. Augustine, Fla., for special temporary duty. April 12, 1901.

Hospital Steward S. W. Richardson, directed to proceed to Buffalo, N. Y., and report to P. A. Surgeon H. D. Geddings for special temporary duty. April 17, 1901.

Hospital Steward L. P. Hall, directed to proceed to Boston, Mass., and report to medical officer in command for duty and assignment to quarters. April 13, 1901.

APPOINTMENT.

Louis P. Hall, of New York, appointed junior hospital steward in the U. S. Marine-Hospital Service. April 12, 1901.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending April 20, 1901:

P. A. Surgeon N. J. Blackwood, detached from Naval Hospital, Philadelphia, April 17, and ordered to the *Alliance*.

P. A. Surgeon L. Morris, detached from the Naval Academy and ordered to Naval Hospital, Philadelphia, April 17.

Asst.-Surgeon R. E. Peck, ordered to the Pensacola, April 25.

Surgeon J. F. Urie, detached from the *Dolphin*, April 20, and ordered to Marine Recruiting Rendezvous, Boston.

Surgeon E. P. Stone, detached from the Naval Dispensary, Washington, April 19, and ordered to the *Dolphin*.

Surgeon F. Anderson, ordered to the Naval Dispensary, Washington, D. C., April 19.

Surgeon J. E. Gardner, detached from Marine Recruiting Rendezvous, Boston, and ordered to the Naval Hospital Cavite, P. I. April 22.

Asst.-Surgeon C. G. Smith, appointed asst.-surgeon, April 12, 1901.

Surgeon W. F. Arnold, detached from the *New Orleans* and to duty at Olengapo, P. I.

P. A. Surgeon A. Alfred, ordered to duty with Marine Brigade, Cavite, P. I.

Asst.-Surgeon E. H. J. Grow, detached from the *Glacier* and ordered to the *Isla de Luzon*.

Asst.-Surgeon J. Stepp detached from duty with First Regiment Marines, Cavite, and ordered to the *Castine*.

Asst.-Surgeon H. C. Curl, detached from *Castine*, and to Cavite, P. I.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine Hospital Service, during the week ended April 20, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, March 30-April 13, 5 cases.
District of Columbia: Washington, April 6-13, 1 case.
Florida: Jacksonville, April 6-13, 14 cases.
Illinois: Chicago, April 6-13, 10 cases.
Iowa: Clinton, April 6-13, 1 case.
Kentucky: Lexington, April 6-13, 7 cases; Louisville, April 3, 1 case.
Louisiana: New Orleans, April 6-13, 12 cases, 2 deaths.
Maryland: Baltimore, April 6-13, 1 case.
Massachusetts: Fitchburg, April 6-13, 1 case, 1 death.
Michigan: Detroit, April 6-13, 3 cases; smallpox present at 10 places, April 6-13.
Minnesota: April 6-13, Minneapolis, 8 cases; Winona, 1 case.
Nebraska: Omaha, March 30-April 13, 18 cases.
New Hampshire: Manchester, April 6-13, 3 cases.
New Jersey: Jersey City, March 31-April 7, 7 cases; Newark, April 6-13, 1 death.
New York: New York, April 6-13, 44 cases, 11 deaths.
Ohio: Cincinnati, April 5-12, 1 case; Youngstown, April 6-13, 1 case.
Pennsylvania: April 6-13, Lebanon, 1 case; Pittsburg, 4 cases, 1 death; Steelton, 4 cases.
South Carolina: Charleston, April 8, 1 case.
Tennessee: April 6-13, Memphis, 5 cases; Nashville, 16 cases.
Utah: Salt Lake City, April 6-13, 25 cases.
West Virginia: Huntington, March 23-April 13, 62 cases; Wheeling, April 6-13, 1 case.
Wisconsin: Milwaukee, April 6-13, 1 case.

SMALLPOX—FOREIGN AND INSULAR.

Belgium: Antwerp, March 23-30, 6 cases, 3 deaths.
Brazil: Rio de Janeiro: March 1-15, 13 deaths.
China: Hongkong, March 2-9, 2 cases, 1 death.
France: Paris, March 23-30, 12 deaths.
Gibraltar: March 23-30, 1 case.
Great Britain: Scotland—Dundee, March 25-30, 1 case. Glasgow, March 29-April 5, 10 deaths.
India: Bombay, March 12-19, 10 deaths; Calcutta, March 8-16, 151 deaths; Karachi, March 10-17, 14 cases, 5 deaths; Madras, March 9-15, 11 deaths.
Italy: March 23-30, Messina, 1 case; Naples, present.
Mexico: Mexico, March 23-31, 1 death; Vera Cruz, April 6-13, 1 death.
Russia: Moscow, March 16-23, 8 cases; Odessa, March 23-30, 3 cases, 1 death; St. Petersburg, March 16-30, 30 cases, 4 deaths; Warsaw, March 16-23, 7 deaths.
Porto Rico: Ponce, March 30-April 1, 4 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, March 1-15, 36 cases, 28 deaths.
Colombia: Panama, April 1-8, 7 cases, 1 death.
Costa Rica, Port Limon, April 5, 1 case.

CHOLERA.

India: Bombay, March 12-19, 3 deaths; Calcutta, March 2-16, 43 deaths; Madras, March 8-16, 3 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, April 6-13, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

Africa: Cape Town, to March 9, 100 cases, 27 deaths.
Brazil: Rio de Janeiro, March 1-15, 1 death.
China: Hongkong, March 2-9, 15 deaths.
India: Bombay, March 12-19, 1,203 deaths; Calcutta, March 8-16, 819 deaths; Karachi, March 10-17, 163 cases, 126 deaths; Madras, March 9-15, 1 case.